Railway Age Gazette

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Railway Age Gazette

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Reduction of the Car Shortage

The reduction of the net car shortage from 148,627 on May 1 to 105,127 on June 1 indicates that the Railroads' War Board is making very gratifying progress in its efforts to increase the efficiency with which the freight car supply is utilized. Later data may indicate that the reduction is partly due to a decline in the amount of traffic handled, but it is more probable that there has been no decline, but rather an increase in the amount of traffic moved. If this should prove to be the case the reduction of 30 per cent in the car shortage will rank as a notable achievement and one signally indicating the policy of unified management which the railways have adopted. Meantime, the decline in the figures of car shortage should not be allowed to give rise to illusions. A net shortage of 105,000 cars on June 1 is entirely unprecedented. Large increases in freight traffic undoubtedly will begin within two months, and then will come the crucial test of what the transportation system of the country can do. Meantime, in order that that test may not be made unnecessarily severe, there should be moved during the next month every pound of freight that can be moved. No effort should be spared to get equipment of all kinds in the best possible condition and every car should be loaded as heavily as practicable and loaded, moved and unloaded as expeditiously as possible. The hardest pull the railways of the United States ever have had, unless all signs fail, will come next fall and winter and unless everybody who can help does his bit a most serious situation will develop.

The Wooden Passenger Car

The recommendation of the Interstate Commerce Commission, repeated in its latest annual report, "that the use of steel cars in passenger train service be required," seems in a fair way toward being carried out without any further effort on the part of the Commission. A bulletin recently issued by the Special Committee on Relations of Railway Operation to Legislation shows that only three wooden cars for passenger train service were built during 1916 and only ten wooden cars for passenger train service were under construction on January 1, 1917. The building of wooden passenger train cars has practically ceased. Those now in service are being retired at the rate of about 2,000 per year. Nearly 9,000 have been retired since January 1, 1912, and 2,213 were retired during the calendar year 1916. Some of those recently acquired are shown to have been "purchased second hand" by the roads now owning them. In all probability many of the wooden cars not yet retired are in service upon small roads or branch lines where the demands upon them in respect to strength are not so great. This showing is of special interest since the substitution of steel cars for wooden cars is a measure of safety rather than a profitable undertaking. The first cost of the steel car is higher and it is probable that the cost of maintenance is greater. The facts point to the conclusion, sometimes overlooked, that railway managements endeavor to keep their equipment, even that which is not directly of a profitable nature, up to the highest standards, to the extent that their revenues permit them to do so.

Save Food and Help Win the War

Next Sunday, July 1, has been designated by Herbert Hoover, who has been put in charge by the government of the work of food conservation, as "food-saving day." Every minister whose name Mr. Hoover has been able to get has been asked to preach upon the subject of "food conservation." The railways can play a not unimportant part in the program of food conservation. First, they can reduce largely the waste of food on dining cars. We have called attention to this point before, but recent observation of the service on dining cars indicates that little progress has yet been made in eliminating the waste on them. The a la carte system still prevails almost universally. The portions of food served still are usually larger than the average person desires to eat. The railways also have opportunity to aid in the food conservation campaign by effecting reforms in the numerous restaurants that are operated by them directly or under contract in their passenger stations. The extremely high prices prevailing for foodstuffs of all kinds are a sufficient reason in themselves for reducing to the greatest extent practicable the waste of foodstuffs which has been more prevalent and has been carried to greater extremes in the

United States than in any other country. It is the condition which these prices indicate, however, which is the really serious matter. They indicate truly that throughout the world before the war began, and more especially since, the demand for foodstuffs has been increasing much more rapidly than the supply. The railways are doing their part to increase the amount of foodstuffs produced in the United States. They ought also to do their part in conserving the supply and thereby preventing the demand from completely outstripping it.

Western Union Again on the Pennsylvania

The announcement that negotiations are nearly completed for a resumption of Western Union telegraph service on the Pennsylvania Railroad lines recalls the days when railroad competition was bitter in the extreme and emphasizes the fact, which is attested to frequently these days, that co-operation between railroad managements is gradually taking the place of cut-throat competition. When the Goulds in 1902 obtained an entrance for the Wabash-Pittsburgh Terminal into Pittsburgh, thus invading territory which the Pennsylvania had considered its own, the late A. J. Cassett, then president of the Pennsylvania, ordered the Western Union, also a Gould property at that time, to remove its telegraph poles and lines from the right-of-way of the Pennsylvania. The Western Union refused and the Pennsylvania ordered the poles on the main line between Philadelphia and Pittsburgh cut down. The Western Union brought suit, contending that railroad right-of-way was in effect a highway and that the Pennsylvania could not consider it private property insofar as to prevent telegraph poles from being erected on it. In 1904 the Western Union finally lost its last appeal in this suit, the court holding that a railroad's right-of-way was private property and could only be taken by right of eminent domain. From 1902 until the present time the Postal Telegraph has been the only commercial telegraph line on the Pennsylvania. On most roads other than the Pennsylvania the Western Union as well as the Postal company has maintained offices at the principal stations and has had more or less mileage of wires strung on poles along the right-of-way. Leaving aside entirely the question of whether one telegraph company instead of two would not have best met the needs of the country as a whole, just as one telephone company does now; as long as there are two companies it will be unquestionably a convenience to the public to have the Western Union back on the Pennsylvania. The fact that the Pennsylvania is willing to forget old grievances and to take the Western Union back, and that the Western Union is willing to come back, shows how far progress has been made toward conciliation and co-operation in disputes between railways since the pole cutting episode in Mr. Cassett's time.

Simplifying Inter-Railway Settlements

Under the present method of handling inter-line accounts, per diem, repairs to foreign equipment, etc., there is a great deal of what would appear to be unnecessary labor involved in both the accounting offices of the railroads and the treasurer's offices. Ever since 1907 the Society of American Railway Financial Officers has had under discussion a clearing house plan by which only the net debit or credit against each road need be settled by check instead of having checks drawn for all of the debits and all of the credits against each of all of the roads; in other words, a plan to make a single check take the place of the hundreds and hundreds of checks now exchanged monthly. The plan never got the official approval of the Association of American Railway Accounting Officers and has therefore hung fire. Part at least of the opposition to the clearing house plan was due to a desire on the part of the accounting officers to keep the management of cash on hand entirely under the control of themselves and their respective executive officers. In other words, they wanted to pay their bills when they found it convenient and not necessarily to have to make a settlement each month at a certain time of the month. The present time, when ways and means of effecting a conservation of railroad labor and railroad facilities is under discussion, is an opportune one for a reconsideration of the railroad clearing house plan. This plan was outlined in an address by T. H. B. McKnight, treasurer of the Pennsylvania Lines West, at the annual meeting of the Association of American Railway Accounting Officers held last year in Detroit. This paper was not printed in the report of the accounting association but is reprinted elsewhere in this issue of the *Railway Age Gazette*. Whether or not the plan is entirely practicable is a matter of expert opinion and opinions in the past have differed somewhat. It is certainly logical and it certainly appears to be practical. Whether or not it is desirable, *under ordinary circumstances*, to sacrifice a certain freedom of management of cash on hand, which each individual road has under the existing method of inter-railway settlements, to effect the economies in labor that would be brought about by the adoption of the clearing house plan is a quite different question than that now presented. The roads are considering and adopting methods of co-operation which are quite at variance with former competitive practices and it is fitting and proper that the railroad clearing house plan should be reconsidered now in the light of present conditions.

DO THE URGENT WORK FIRST

AT the present time when railway facilities are being taxed to their capacity, the construction of improvements which will enable more traffic to be handled is highly desirable. If it were practicable to do so, vast programs of betterment work could be undertaken with the knowledge that they would yield good returns on the investment. However, the present limitations of men, money and materials render such a procedure out of the question and the problem confronting the railway managements at present is the selection of those projects which will give the greatest and most immediate relief, and the concentration of their energies on them. This requires a careful analysis of the traffic now being handled and expected in the near future with reference to the facilities now existing and proposed, and present methods of operation.

While in general such an analysis is made more or less accurately before undertaking any large project, the need is specially urgent this year. Such a study will lead in many instances to the reduction of a double tracking project covering an entire division so that it will only include short stretches for some distance out of the terminals, on heavy grades and slow sections and at other points of congestion which will raise the capacity of the division to or above that of adjoining and governing facilities. In the same way it is of little advantage to increase the line capacity if the terminals are already overtaxed, for the capacity of a road is no greater than that of its most congested facility, line or terminal.

The mistake has also been made at times of expending a large sum for an improvement which in itself is only of limited benefit until other related improvements are also made, without undertaking the entire program. The result of such a procedure is to make the original investment largely unproductive. As an example of this a large classification yard was built by an important road at a large city to relieve an inner and congested yard of classification work. As a part of this project a detour line was projected to enable trains to enter this yard directly. After building the yard this projected entrance line was abandoned with the result that the yard itself proved so uneconomical in operation that it

has since been used primarily for the storage of cars. It would appear self evident that once an improvement was undertaken it should be pushed to completion in order to secure the full return on the original investment, assuming of course, that the project was well planned originally. As stated above, desirable as many improvements are, it is impossible to undertake all of them at the present time, and it is therefore necessary that the work to be done must be selected after the most careful consideration, as it is in this way that the success of the road will be measured most directly within the next few years.

FOR MEMBER OF THE INTERSTATE COMMERCE COMMISSION—F. A. DELANO

IT always has been desirable that there should be appointed to the Interstate Commerce Commission men who have an expert knowledge of the railway business. This has seldom been done. It is especially desirable that the successor of Commissioner Clements should be a railway expert of the first rank. There never was a time when the problem of the railways in handling the country's commerce satisfactorily was as difficult as it is now, and it will grow more difficult as the large traffic the war will cause shall develop. The commission recently has been given by law the authority to regulate freight car service. Before it undertakes to exercise that power there ought to be among its members at least one man who has had experience in railway management.

A series of developments has given President Wilson the opportunity to appoint from his own official family a man who possesses in a pre-eminent degree not only the needed railway experience but almost every other qualification for making a truly great Interstate Commerce Commissioner. The man referred to is Frederic A. Delano, now a member of the Federal Reserve Board.

Mr. Delano began his railway career as a machinist's apprentice; and advanced through the mechanical department of the Burlington to superintendent of motive power and general manager. He was then successively vice-president and president of the Wabash and president of the Monon. Thus, as a railway man, he has had experience as a mechanical employee and officer, as an operating officer and as a chief executive. He has been, besides, an earnest and profound student of railway rate and other railway economic problems.

He is still a young man. He has the judicial temperament in a high degree. His attitude is uniformly fair. He is a public-spirited citizen; and one president of the United States recognized his fitness for public service by offering him the ministry to China and membership on the Interstate Commerce Commission, while another recognized it by appointing him to the Federal Reserve Board. While he was long in railway service he has been now for some years in public life, and therefore has doubtless come to look at railway matters somewhat differently from the way he did when a railway officer. Our understanding is that he once refused appointment to the Commission because he did not wish to give up his railway career. Having now left railway service, he would no longer have this reason for declining. It would be far easier to find a man fitted to succeed him on the Federal Reserve Board than it would be to find another man possessing his qualifications for membership on the Interstate Commerce Commission.

The *Railway Age Gazette* puts forward the suggestion that Mr. Delano be appointed without having consulted with him or anybody else about the matter. We believe, however, that the suggestion will be well received by most of the shippers, the railway officers and other persons who are familiar with existing conditions in the fields of railway transportation and railway regulation, and who at the same time know Mr. Delano. The *Railway Age Gazette* has no doubt that, under existing circumstances, he is the best qualified man in the United States to succeed Commissioner Clements.

WHY NEEDLESSLY IRRITATE THE PUBLIC?

THE Pullman Company has issued instructions to its ticket agents, effective July 1, the most important of which are, first, that "accommodations will be reserved only when ticket is purchased or by telegraph or telephone message from outside points where tickets cannot be secured"; second, that when tickets are returned to a ticket agent prior to departure of the car for which they are issued they shall be marked space released, and the purchaser advised that in order to secure a refund he must forward the ticket, with explanation of its non-use, to the general ticket agent of the Pullman Company at Chicago.

In issuing these instructions, the Pullman Company has acted contrary to the recommendation of a committee representing the railways. The railways' committee recommended in substance that "sleeping and parlor car reservations must be paid for on date reservation is made. If reservation is made on date of departure it must be paid for two hours prior to departure of train, but in no case later than 2 p. m. date of departure. Sleeping or parlor car tickets may be redeemed if presented to agent from whom purchased two hours prior to departure of train, but in no case later than 2 p. m. date of departure. Failing in this, said tickets will only be redeemed by the general ticket agent of the issuing company"—that is, the Pullman Company or lines owning their own sleeping or parlor cars, providing the reservation is canceled before the departure of the train for which it was sold.

The recommendation of the committee representing the railways, like the order of the Pullman Company, contemplated the practically complete abolition of reservations of sleeping car and parlor car space which were not accompanied by actual purchase of tickets. If, however, a man bought a sleeping or parlor car ticket and then decided not to make his trip on the train for which he had bought it, he could, up to within two hours of train time, under the plan recommended by the railway committee, get his ticket redeemed at the ticket office of the railway. On the other hand, under the rules of the Pullman Company, which are to go into effect on July 1, if he buys a sleeping or parlor car ticket at all and does not use space on the very train on which he has bought it he cannot get his money back from the railway agent, but he must send his ticket for refund to the general ticket agent of the Pullman Company at Chicago.

The *Railway Age Gazette* believes that the arrangement which the Pullman Company contemplates putting into effect is a most unwise and unfair one, and that it will make great trouble for both the railways and the Pullman Company. In the first place, a man who pays anything from $2 up for sleeping car space, and who then, perhaps, 24 hours before the train on which he has bought it leaves, changes his mind, is going bitterly to resent it if instead of being able to get his money back at once at the ticket office of the railway, as he has been in the past, he is required to send to the headquarters of the Pullman Company in Chicago for his refund. In the second place, there is great danger that the competitive rivalries between the railways, which the Railroads' War Board was created largely to eliminate, will be awakened and increased by this arrangement. Suppose a man who wishes to go from Chicago to Kansas City buys a ticket over the Burlington and subsequently asks the ticket office of the Burlington to redeem it, and meets with a refusal. Suppose that later he buys a ticket over the Chicago & Alton or the Chicago, Milwaukee & St. Paul, or some other line to Kansas

City, and asks the ticket office of that line to redeem it, and it does so, in spite of the instructions of the Pullman Company. That man is going immediately to denounce the management of the Burlington; and no railway management is going to let itself be long denounced for obeying a rule which other railways disregard. In the second place, whether the rule is lived up to by all roads or violated by some of them it will make, primarily, the railways, and secondly, the Pullman Company, odious and tend to defeat the main purpose which both the railways and the Pullman Company have in view. That purpose is to abolish the system of reservation of sleeping car and parlor car space without payment at the time reservation is made.

The present system of reservation of sleeping and parlor car space without immediate payment is indefensible and contributes as much to waste in passenger service as any other one thing. It ought to be abolished. But if in their efforts to abolish it the Pullman Company insists upon and the railways accept a system under which all refunds for space must be made through the headquarters of the Pullman Company in Chicago, they very probably will arouse such a storm of protest from the press and the public that they will destroy the excellent opportunity they now have for abolishing the wholly bad system of reservation.

NEW BOOKS

Stresses in Structural Steel Angles. By L. A. Waterbury, professor of engineering, University of Arizona 77 pages, illustrated, 5½ in. by 8 in. Bound in cloth. Published by John Wiley & Sons, 432 Fourth avenue, New York. Price $1.25.

A structural steel angle when used alone or in pairs forms an unsymmetrical section, a condition commonly aggravated by the method of attachment, and in consequence bending moments are set up that are usually applied obliquely to the rectangular axes. This book has been written with a view to giving a more rational method for taking these conditions into consideration in design. This includes the determination of the section modulus polygons from which the section modulus for any axis may be determined quickly Forty-six pages of the book are devoted to tables designed to permit the ready application of the methods expounded.

Railway Estimates. By F. Lavis, consulting railway engineer, New York City. 6 in. x 9 in. 608 pages. Bound in cloth. Illustrated. Published by McGraw-Hill Book Company, 239 West 39th St., New York City. Price $5.

No problems in railway engineering are a source of greater difficulty to the engineer, particularly the young engineer, than estimates. For this reason a book that treats this subject in a comprehensive manner, especially when written by a man of extended experience, meets a well defined need. The author's long contact with railway construction and operation is expressed in this book through his general comments on the material given, rather than through the presentation of data selected from his own work, for the book represents an arrangement of data collected from a variety of sources and evidences a careful study of all available material. The first chapter deals with the preparation of estimates, their purpose, degree of accuracy, etc. The second discusses the cost of complete railways and is followed by eight chapters dealing in turn with the cost of the various items that go to make up the complete railroad, beginning with clearing and grubbing and ending with buildings, terminals and yards. A concluding chapter of 72 pages goes into some detail regarding the cost of rolling stock but deals particularly with the characteristics of motive power and cars as affecting the determination of the grade line and justifiable expenditure. Several valuable appendices are also included in the book, among which mention is due a set of complete specifications for grading work, a review of timber treating practice, a compilation of general railway statistics on railways of this and foreign countries and a large number of tables of considerable use to the railway engineers.

Letters to the Editor

GIVE THE ENGINEER A CHANCE

BUFFALO, N. Y.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

May I be permitted to add a few words to the discussion of the reasons why young men are not entering the engineering departments of the railroads to the extent that they have in the past? I worked for one of the most prosperous roads in this country and the following remarks summarize the reasoning which I used to finally persuade myself to give up the game. My experience has been with the departmental system of organization, but I believe the following remarks apply with almost equal force to the divisional system.

Let us consider first the maintenance of way branch of engineering. Positions in this line are generally more permanent than in construction work and, as a result, promotions are slower. From my own observation, it takes an average man about ten years to command a salary of $150 monthly in a division engineer's office. In construction work the rate of advance is somewhat more rapid and $150 a month may be attained in eight years. But in construction, employment is usually of three or four years duration, and the period of inactivity between jobs is very indeterminate, depending usually upon the prosperity of the country. In either position, after $150 is reached, there is generally a long period of standing still. At this point keener competition develops, seniority enters and a man usually must await his turn for further promotion.

Consider the working conditions in either branch of service: outside work the year round, pleasant enough in summer but worse than Sherman's definition of war in the winter; hard manual labor the first two or three years; frequently 12 to 14 hours on duty; and in construction, often living in small towns or away from civilization for long periods of time.

To offset these, or to compensate for them, the company generally does nothing. It is next to impossibile for an engineer to become an operating official, for he does not know practical railroading. Many of our larger industrials maintain schools to train their employees in special lines of service. Is it impossible for the railroads to do the same? An engineer, worthy of the name, is by the very nature of his education and training, able to grasp problems as a whole and carry them through to their logical conclusion. He must be able to adapt himself to conditions; meet emergencies with the resources at hand and surmount them; foresee and weigh the result of each decision with respect to the whole problem under consideration. Surely the engineman, conductor or yardmaster who works up to superintendent is no better fitted for this position than would be an engineer put through a proper course of training. There is no magic in railroad operation. When a man learns that the business of a railroad is to move trains, and that no two trains can occupy the same space at the same time, he has mastered its fundamentals. Details there are, plenty of them, but they are not insurmountable. The really big executive leaves details to his subordinates. A superintendent's job is to superintend. His big problem is to see that his organization is capable—which brings us back to the prime requisite of an engineer, that he be able to organize and execute.

There is one drawing card for railroad work that few other lines possess, and that is its fascination. The young man enters railroad work because, for a large percentage of the live American youth, there is a fascination in anything swiftly moving. It is fascination that keeps him there oftentimes when his sober judgment tells him to get out, and it is fascination that often pulls him back into the game

when he has gone into some other line. It is my firm conviction that, given an opportunity for the future in any way comparable to that offered by industrial work, the best of the engineering apprentices would overwhelm the railroad engineering departments with their applications. Open the door to real railroading to the engineering department and the railroads will no longer have to seek their operating and transportation officials from the best that the other roads possess.

W. B. KEEFE.

FUEL WASTE IN STANDING LOCOMOTIVES

MILWAUKEE, WIS.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

The article on Savings Within the Despatcher's Power, published in the *Railway Age Gazette* of March 16, page 442, brings to mind some experiments which I made a few years ago relative to the amount of coal required in keeping locomotives alive and the amount used in firing them up. These tests were made in actual service with Illinois soft coal. The number of scoops were counted and from a test it was found that about 18 lb. of coal were handled to each scoopfull. The following table gives the amount of coal required per hour to maintain the steam pressures noted:

Type	Kind of Firebox	Heating Surface, sq. ft.	Steam Pressure, lb.	Coal Used, lb.
4-6-0	Wide	2,900	200	177
4-6-0	Wide	2,700	200	161
4-6-0	Narrow	1,400	150	131
4-4-0	Narrow	1,100	140	128

The first two of these locomotives were compounds.

A further test was made to determine the amount of coal necessary to obtain a steam pressure of 100 lb. in the enginehouse, after the boilers had been washed. They were filled with hot water at about 115 deg. F. after washing. On the first engine shown in the above table 100 lb. of steam was obtained in 2 hr., 45 min., with 846 lb. of coal, using natural draft. With the same locomotive 100 lb. of steam was obtained in 1 hr., 40 min. with 756 lb. of coal using forced draft. A third test on the same locomotive showed that 2 hr., 30 min. were required to raise 100 lb. of steam in the boiler after the water had been standing in it for 32 hr. in the house; 648 lb. of coal were used with natural draft. To maintain a steam pressure of 100 lb. on these engines, 54 lb. of coal per hour were required.

H. W. GRIGGS.

NEED FOR ORGANIZATION OF ALL SECURITY OWNERS

CHICAGO.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

I have read with great interest the article in your issue of May 25 concerning the organization, in Baltimore, of the National Association of Owners of Railway Securities. This is a good beginning, but it is not broad enough in scope. There are certain problems of broad significance affecting the future of corporations, industrial and public utility as well as railroad, which will require the combined effort of all security holders to be effectually solved. Therefore all security holders should be welded into one powerful organization for the protection of their rights and of their corporations wherever these are assailed.

The attitude of labor and of legislative bodies are each fundamental problems and the manner of handling them affects every security holder directly or indirectly. Organized labor is ever becoming more arbitrary and insatiable in its demands. Of late it has been able to impress its will upon the employers, and the public as well, through legislative channels; witness the Adamson law. Labor publications are calling upon the workers to come into their own—as they choose to style it—meaning thereby to invade the property rights of others. Because of their numbers and potential voting power the cry is heard in legislative halls all over our country, even in Congress itself. This tendency should be viewed with the gravest concern because it pertains particularly to corporations, which are the largest employers of labor, and through them to the security holders.

So, too, a way must be found to control the current of legislation so that political buccaneers or myopic dreamers may not disrupt and disorganize the business and economic fabric of our nation. Taxing bodies and regulatory bodies must be restrained within reasonable limits, lest they become a burden greater than the business and corporate interests of our country can bear.

It is to combat evils such as these that all security holders should be gathered into an association strong enough in numbers, in organization and in funds, to make their influence felt wherever corporate interests are at stake. Here, too, there is a potential voting power to gain the ear of the legislator, once it is supervised and directed into the proper channels. If we are to have an association of this character, let us have one officered and led by the very best brains in the country, including in its membership every security holder great and small. Let its mission be the protection of their interests by every legitimate means, the molding of public opinion and the promotion of just and wise legislation. With the attainment of success along these lines the business interests of this country may look forward to an era of prosperity which, in its ramifications, will reach down to the humblest citizen.

R. S. BARKER,
Machinist Helper, C. & N. W. Ry.

THE PENNSYLVANIA DECAPOD TYPE LOCOMOTIVE

FOREST HILLS, L. I.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

The Pennsylvania 2-10-0 type locomotive illustrated in your issue of June 15 is of especial interest, the important features of course being the use of large cylinders with a maximum cut-off of 50 per cent, together with a high steam pressure to enable the tractive effort developed to utilize the proper percentage of the adhesive weight. The use of 32-in. cylinders necessarily placed outside the framing and a working steam pressure of 250 lb. is in itself a daring step to take and it will be very interesting to know as time goes on, what mileage this locomotive will make between shoppings.

Considering the engine as a vehicle and also from the standpoint of ease of starting full capacity loads, the question arises in one's mind as to why the designer did not use three cylinders, one between the frames and two outside, each 26 in. in diameter, which would have given the same tractive effort, other things being equal. On the other hand, the cylinders could have been made larger and the steam pressure reduced or, again, with the same steam pressure and the larger cylinders, the stroke could have been shortened, which together with the lighter motion used because of the smaller size of the cylinders, would have reduced the size of the balance weights required, all points which the writer believes to be advantageous. With three cylinders, connected to cranks placed 120 deg. apart, starting could easily have been taken care of without a trick port such as is used in the present design. The turning moment on the axles would be improved and the chances of slip much reduced.

The writer appreciates the fact that it will be argued that inside connected engines have not been successful in the United States, but that is not sufficient. The advantages of a subdivision of power are so great that the whole question should be carefully reconsidered and given greater weight than heretofore. Inside two-cylinder engines, or a combination of inside and outside cylinders in the three or four cylinder systems, give great satisfaction in England and the writer has never yet heard of any reasons why what can be done in British practice cannot just as well be done in the United States.

E. CECIL POULTNEY.

Main Line Steel Passenger Cars for the Erie

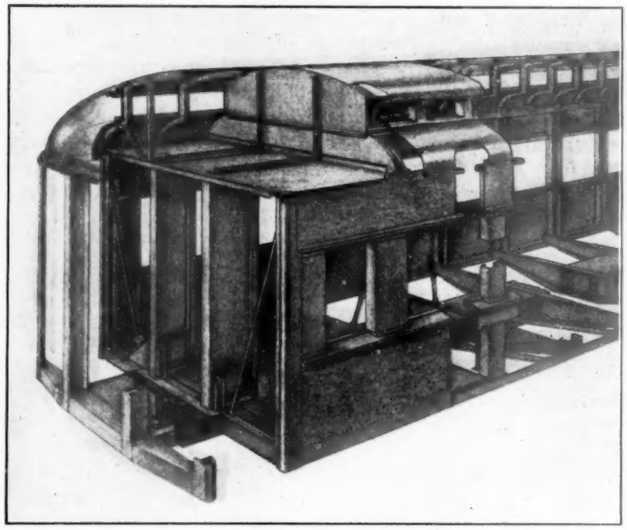
Design Marked for Its Light Weight and Strength; A Noteworthy Anti-Collision Bulkhead Construction

THE Erie Railroad has recently placed in service five all-steel coaches and one all-steel baggage car for through line service, which weigh materially less than the existing equipment with steel underframes and wood superstructures now used by that road in similar service. These cars were built by the Pressed Steel Car Company from designs prepared by L. B. Stillwell, consulting engineers of New York City, and are especially noteworthy because of the distribution of metal in the superstructure, which provides an unusually stiff construction throughout. The unusually light weight of the cars was made possible by following the same system of high truss side frame design, differing only in detail, that was used in the all-steel suburban cars built for the Erie about two years ago and described in the *Railway Age Gazette* for June 11, 1915, page 1243.

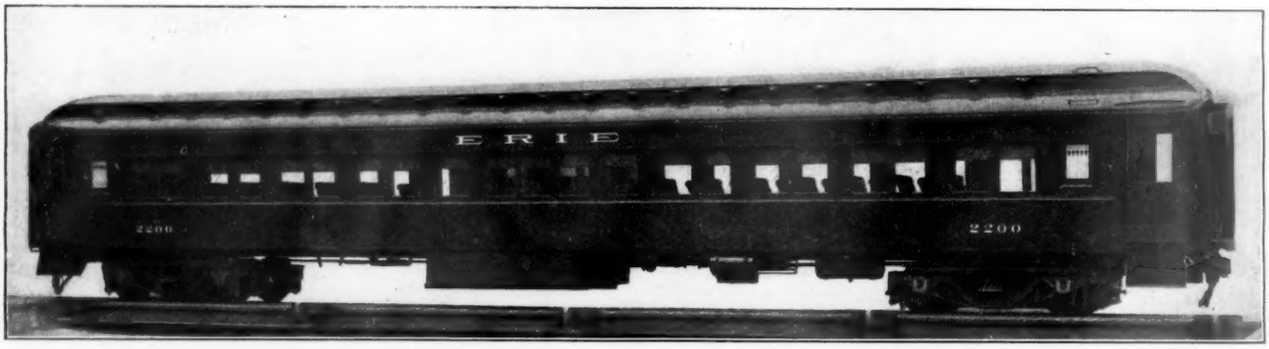
This saving of weight is of importance not only in effecting a reduction in the first cost through the elimination of unnecessary steel, but also because of the possibility of changing from wood cars to all-steel cars in main line service, without taxing the capacity of existing passenger motive power. In many cases the advent of all-steel equipment has necessitated an increase in the size of locomotives used in through passenger service. A third, and no less important economy, will result from the reduction in the amount of fuel used per car-mile because of the smaller net weight of the equipment.

Aside from the economic advantages accruing from the light weight, the design of the new cars is of interest because of the unusual strength of the car body which is designed especially with reference to its ability to resist destruction in collision or derailment. This is accomplished by the introduction of two new members in the body end: An anti-telescoping tie member of heavy plate, extending across the car from side wall to side wall for about 5 ft. 6 in. lengthwise of the car, forming a flat ceiling for the lavatory, passageway and saloons; and special door posts in the body end frame formed of vertical .21-in. pressed steel beams. These beams are framed into the center sills and to the anti-telescoping plate above with connections capable of developing the full strength of the beams.

The arrangement of the body door posts and the anti-telescoping tie member is clearly shown in the perspective drawing of the end construction of the car. It is evident that the heavy doorposts, together with the anti-telescoping plates which tie the side walls together at the roof line, and their rigid attachment to the underframe provide an anti-telescoping bulkhead of great strength. The vestibules are of the usual construction and obviously are less capable of resisting a severe shock than is the heavy body end construction. Consequently, if the car is subjected to a violent collision shock, the vestibule structure may be expected to close up against the body of the car and in doing so somewhat cushion the force of the blow. The further progress of the colliding body will be greatly checked, if not arrested by the heavy body end construction. This construction should greatly reduce, if not eliminate that most common and most destructive form of collision—the splitting open and telescoping of one car by one of its neighbors or by a locomotive.



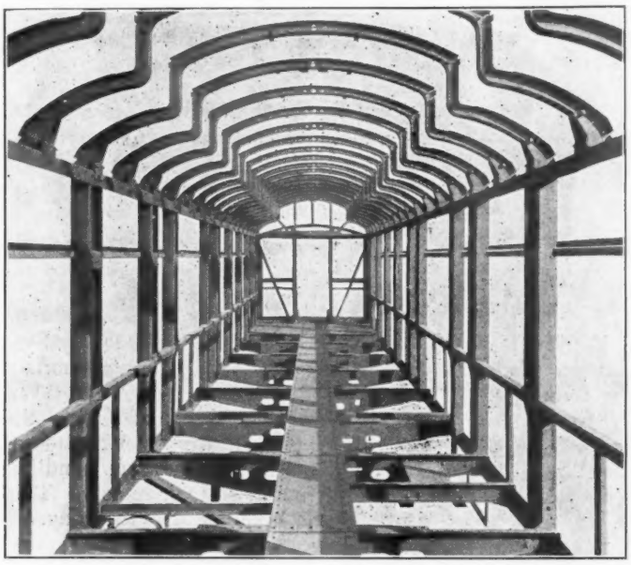
A Perspective View of the Anti-Collision Bulkhead Construction



Steel Coach for Through Line Service—Erie Railroad

This design is the result of a careful study of the effects of collisions and derailments upon cars, particularly those of all-steel construction, which has covered a period of six years. This study has been based upon personal inspection and examination of the photographic records of many accidents involving passenger equipment. As a result it is the conclusion of the designers that the heavy underframes so

generally used in steel passenger train equipment not only afford little protection against damage to cars in derailment or collision, but in themselves not infrequently increase the destruction of life and property because of the effect of their excessive weight. In case of collision the underframe of at least one car in a train is usually raised at one end above



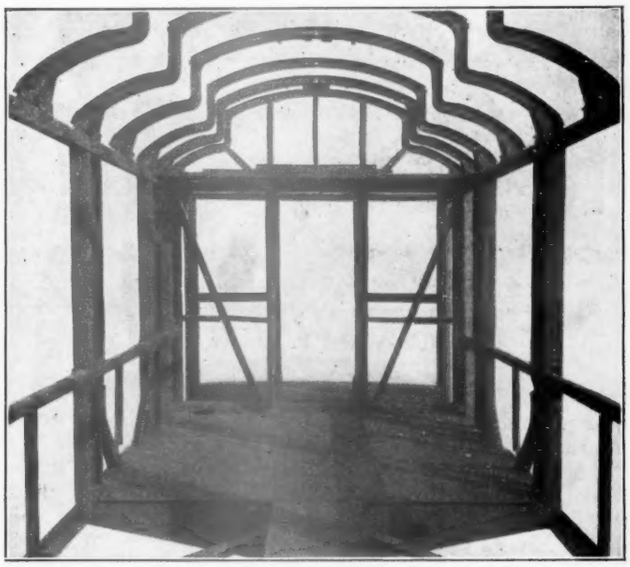
Interior View Showing the Details of the Frame Construction

that of the adjoining car. When this occurs, the greater the weight and strength of the underframe as compared with that of the superstructure of the neighboring car, the more effective it becomes in destroying that superstructure.

The additional weight of material incorporated in the heavy body end structure is more than offset by the reduction in weight effected elsewhere in the design. The complete weight of the coaches, including the four-wheel trucks, but excluding the lighting equipment, is 111,000 lb. each. The weight of the car body is such that it may be carried on four-wheel trucks with journal loads well within the limits prescribed by good operating practice.

The framing system of the through line cars is similar to that employed in the Erie suburban cars with the exception that the windows are rectangular, whereas those of the suburban cars were of the Gothic form. In each case the vertical members are framed together into a girder, the depth of which is equal to the full height of the side walls, and which acts as a load carrying member. This not only produces a car structure free from appreciable deflection, but greatly increases the safety of the passenger space in case of accident.

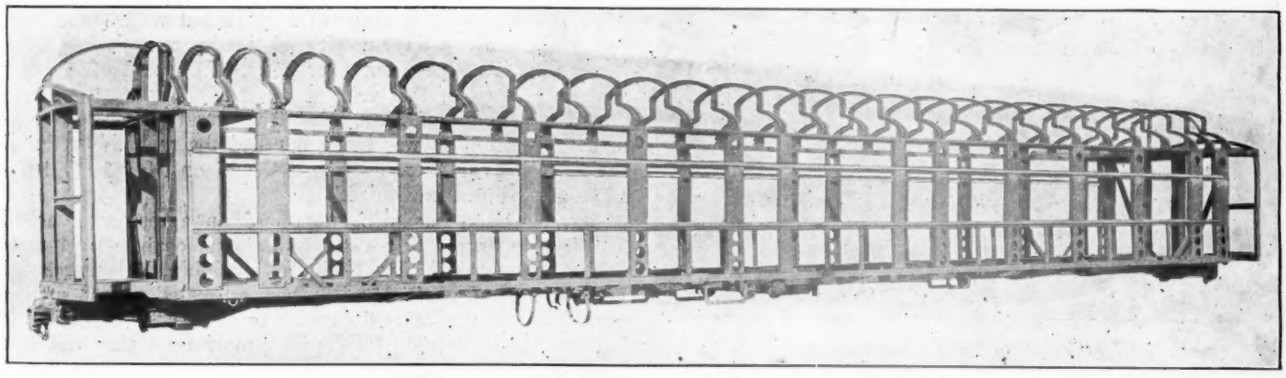
The bottom member of the side frame girder is the angle side sill of 4-in. by 3½-in. by ⅜-in. section. The main piers are approximately 5 ft. 11 in. between centers and are C-shaped pressings 12 in. wide by 4⅞ in. deep. The upper member of this high girder is a pressed channel of 5¼-in. by 3/16-in. section. The bracing of the piers is accomplished by the side sheathing and the belt rail below the windows, and by the letterboard and upper belt rail above the windows. The load carrying girder is thus 7 ft. 7 in. in height by 70 ft. long as compared with the usual construc-



A View of the Framing at the End of the Car, Also Showing the Body Bolster and Underframe Stiffening Plate

tion having a girder about 3 ft. ½ in. in height and 70 ft. long, below the window sills.

The center sills are composed of 12-in., 25-lb. channels provided with a top cover plate and bottom flange angles, and having a total sectional area of 27.915 sq. in. They are supported and alined by the side frame girders through the body end sills, bolsters and crossbearers placed at every main pier, approximately 5 ft. 11 in. between centers. This in effect, produces a compression member stiffened by flanges over 7 ft. in depth and eliminates all possibility of deflection of the center sills in a vertical plane. As a means of bracing the center sills against horizontal deflection, 12 diagonal braces are incorporated in the underframe, each extending from the center sill to a main pier at one of the crossbearers. These diagonal braces, with the side sills and cross-

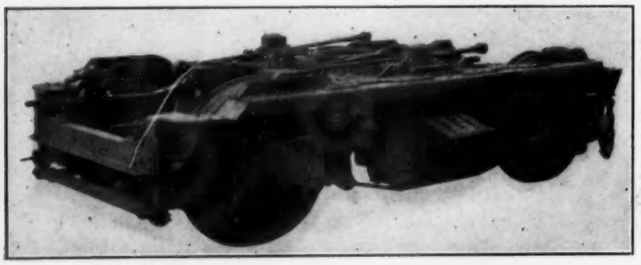


Side Elevation of the Steel Frame of the Erie Coaches

bearers, form a horizontal truss for alining the center sills which is 9 ft. 9½ in. wide.

The underframe is provided with a double body bolster the upper member of which consists of a plate ¼ in. thick. As shown in one of the photographs, in front of this cover plate is a floor plate extending to the outer end of the body end sill. This plate securely ties together the side sills, end sills and center sills, and together with the diagonal braces prevents any possible horizontal deflection of the underframe.

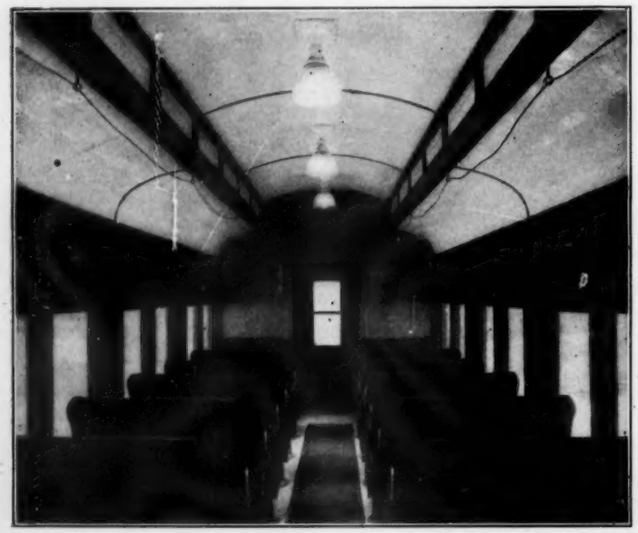
The framing of the roof is shown in the two views of the interior of the car frame and is designed to co-ordinate with the upper portion of the side walls in combination with the



Erie Four-Wheel Passenger Truck

anti-telescoping tie plate to resist compression stresses and also to protect the passenger space in case the car is overturned through derailment.

The general features of the design of the truck are shown in one of the illustrations. It is similar to that used under the Erie all-steel suburban cars previously referred to, this design having proved very successful in service. The riding qualities are considered fully equal to those of the usual type of six-wheel truck. The trucks are equipped with the American Brake Company's clasp brake which not only contributes greatly to the comfort of the passengers when brake



Interior of the Erie Steel Coaches

applications are being made, but adds materially to the safety and economy of operation.

The seating arrangement of the new cars conforms to that of other cars now in Erie through line service, a smoking compartment seating 12 passengers being placed in the middle of the car. The walls of this compartment are fitted with leaded glass windows and the seats are upholstered in leather. The seats in the rest of the car are upholstered in plush. Each end of the car is fitted with a saloon and lavatory. The seating capacity of the cars is 76, including the 12 seats in the smoking compartment.

The illumination of each car is obtained from ten incandescent lamps set on the center line of the ceiling. The power for lighting is furnished by a straight storage battery installation, consisting of an 800-ampere hour Wilson battery with lead lined cells. The capacity of this equipment is sufficient to furnish light for the round trip between Jersey City and Chicago without recharging.

The general dimensions of the cars are given in the following table:

Length over vestibule end sills	78 ft.
Length over vestibule body end sills	70 ft.
Wheel base of trucks	8 ft.
Height of car over-all	14 ft. 3 in.
Height of car over sheathing	9 ft. 9¼ in.
Weight of car body	80,660 lb.
Weight of two trucks, complete	30,240 lb.
Weight of car without storage batteries	110,900 lb.
Storage batteries, boxes and hangers	8,700 lb.

THE RAILROADS' WAR BOARD

Fairfax Harrison, president of the Southern Railway System and chairman of the Railroads' War Board, authorizes the following:

"In response to the patriotic demands made upon the railroads of the United States by the Railroads' War Board. they have so increased their efforts that they are handling a far heavier tonnage today than ever in their history. This is indicated in reports which the War Board is receiving.

"Increasingly satisfactory reports regarding the grain transportation situation, together with official government figures just at hand on the amount of bituminous coal hauled from the mines by the railroads in the month of May, lead to the belief that through the co-operation of railroads and shippers, real progress is being made in the campaign inaugurated by the Railroads' War Board two months ago, with a view to securing the maximum of national transportation efficiency.

"According to the government figures now compiled, the 82 principal bituminous coal carrying railroads in May, 1917, hauled 142,157 more carloads of coal—approximately 7,100,000 tons—than they did in May, 1916. This was an increase of 23.8 per cent. The railroads hauled 739,674 carloads of bituminous coal in May of this year, compared with 597,517 cars in May, 1916.

"That real headway is being made in the effort to save the time of freight cars by quick and prompt loading and unloading is brought out in the government figures which show that the daily average of cars loaded with bituminous coal each working day in May of this year was 28,449, an increase of 23.8 per cent over May, 1916, and of 8.1 per cent over April of this year.

"In the month of May, while this greatly increased tonnage of bituminous was being handled the railroads reduced the so-called car shortage from 148,627 on May 1, to 105,127 cars, almost one third."

Mr. Harrison has also announced an agreement reached by all shippers of tide-water bituminous coal to pool their coal at the ports of New York, Philadelphia, Baltimore, and Hampton Roads, which will, it is estimated, effect such a saving in the use of coal cars as to enable the railroads to haul to these ports 6,640,000 tons more than they did last year when they hauled 31,000,000 tons. This arrangement was brought about through the co-operative efforts of the Committee on Coal Production of the Advisory Commission, Council of National Defense, and the Railroads' War Board.

Under the new plan, instead of shippers sending 1,156 kinds of coal to the Atlantic seaboard, they will reduce the number to 41; when coal of a certain grade is wanted for a steamer, the coal of that kind of any and all shippers will be used to fill the order. Coal men have sacrificed long

established trade names in the adoption of this plan, and from now on coal will be coal when it gets to tidewater, and there will no longer be any holding of coal in freight cars until one shipper accumulates a full cargo of a particular grade.

The use of 133,000 freight cars will be saved by this pooling arrangement, it is thought. Delays to cars at ports will be cut down, and a very large part of the shifting of cars at tidewater terminals will be eliminated.

To manage the bituminous coal pool, the shippers have organized the Tidewater Coal Exchange, with offices in Washington, and with Rembrandt Peale, of New York, as general commissioner. An executive committee is composed of Arthur Hale, vice-president, Consolidation Coal Company, chairman; S. P. Hutchinson, president, Westmoreland Coal Company; E. B. Chase, Berwind-White Coal Company; L. A. Snead, sales manager, White Oak Coal Company, and Mr. Peale.

The Railroads' War Board has had prepared and distributed 50,000 copies of a colored poster, the first of a series, addressed to railroad men, which will be placed in shops and other places where railway employees gather. The poster is illustrated with a large locomotive and train and an insert showing soldiers firing a large gun. The wording is as follows:

YOUR NATION'S NEEDS AND YOUR PART IN IT.

YOUR JOB DURING THE WAR IS TO CARRY THINGS WHERE THE COUNTRY NEEDS THEM.

WHAT GOOD IS A GUN, UNLESS YOU HAVE IT WHERE IT IS NEEDED? WHAT GOOD IS A GUN WITHOUT SHELLS—WITHOUT FOOD FOR THE MEN WHO FIRE IT?

YOUR SERVICES ARE ABSOLUTELY VITAL TO OUR COUNTRY'S SUCCESS IN WAR.

YOU ARE A RAILROAD MAN.

THE NATION IS COUNTING ON YOU.

In connection with its campaign for heavier loading of cars, the Commission on Car Service has had made a series of rubber stamps which are used to print a brief suggestion as to the importance of heavier loading on each letter which goes out from the commission's office. Some of these "reminders" are as follows:

"Practice double loading of commodities having low minimum."

"Increase of 40 per cent in car loading would be equivalent to adding 250,000 cars to present supply."

"Order only cars wanted for *immediate* loading."

"Make one car do the work that heretofore has required two. It can be done."

"A car saved is a car made."

"Don't be a 'Slacker.' Load cars to full capacity."

"Mr. Shipper: You can overcome car shortage by loading to full cubical or carrying capacity, plus 10 per cent of the latter."

"Load cars to full capacity. This is quickest and surest remedy for car shortage."

"Dear Mr. Shipper: The railroads are trying to increase car loading. Are you doing your part?"

"The remedy for car shortage is heavier loading."

"Release cars as quickly as possible regardless of free time allowed by demurrage rules."

The sub-committee on materials and supplies of the Railroads' War Board, of which H. B. Spencer, vice-president of the Southern, is chairman, has been making a canvass of the railways as to the quantity of relay rails available in case it is desired to accumulate a large amount of this material, possibly for use in France. It has also made an investigation as to the number of old locomotive boilers available for use at army camps for lavatory purposes.

The committee has also been investigating the situation of car and locomotive builders and of the railways as to materials and supplies, with a view to making clear their necessities in relation to the efficiency of the transportation system, and has made suggestions to the priority committee of the general munitions board of the Council of National Defense that materials necessary to the maintenance and operation of the railways should be included in the consideration of articles to be given preference in manufacture. This applies particularly to steel products necessary to complete cars and locomotives now under order and delayed by the inability of car manufacturers to secure equipment, and also to steel required for the strengthening of bridges.

The committee has also had conferences with steel manufacturers on the subject. The car builders of the country have on their books orders for approximately 100,000 freight cars but are turning out only from one-fourth to two-thirds of their capacity because of shortage of steel and lumber.

The sub-committee on Military Transportation Accounting has been authorized by the Executive Committee to take immediate steps to create and maintain for the account of all the railroads a central accounting bureau in Washington, through which all transportation accounts for materials used in cantonment construction shall be centered for presentation to the War Department. In a circular issued to the railroads, the committee says that the construction of 16 more cantonment camps will involve the assembling from various points of large quantities of materials which will require expeditious movement involving intricate accounting features, which will necessitate uniformity in way-billing, execution and accomplishment of bills of lading and settlements with the government for transportation charges thereon.

To the end that the necessary aid may be given the government in this work and that prompt and proper settlements for transportation charges may be accomplished, the sub-committee on Military Transportation Accounting is authorized and directed immediately to promulgate and issue such details for the guidance of all railroads in all matters relating to accounting features incident to shipments for cantonment construction and they are requested immediately to issue such instructions as will insure a strict compliance with such accounting rules and regulations as may be issued by the sub-committee.

"It has been fully demonstrated," the circular says, "that through interline waybilling, points of origin to final destinations, is a salient means of expediting the movement of freights. To the end that all practical means which tend to expedite the transit of government freight and the release of equipment may be adopted, you are respectfully requested to, upon receipt of this bulletin, issue such instructions as will immediately cause all government freight originating on your lines destined to points on other railroads to be waybilled through to final destinations regardless of whether or not through rates and divisions prevail."

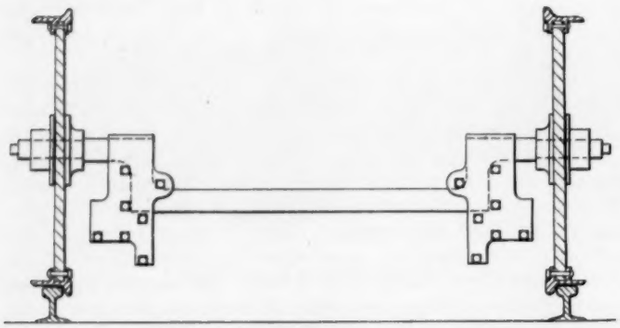
The Railroads' War Board, in a communication to the chief of engineers, United States Army, gave the following as the position of the railroads of the country regarding commercial transportation on navigable waters: "The railroads will welcome any practicable water transportation, and they are prepared to co-operate cordially with responsible persons or corporations who may provide such water transportation, by the exchange of traffic, the issuance of joint bills of lading, and, if necessary, where conditions justify it, by joining the water carriers in the building of tracks to connect the railroads with the wharves and landings of water carriers."

ITALY ELECTRIFYING RAILROADS.—The Italian government is electrifying fifteen railroads, with a total mileage of 1700 miles, in an effort to solve the coal problem.

A "CONVERTED" GASOLENE INSPECTION CAR

On the Arizona Eastern there is in use an inspection car which has been made from a Chalmers automobile, 1912 model, the principal changes made in the car being the reconstruction of the wheels and the addition of a pilot. The pilot is fitted with hinged brushes designed to scrape small obstructions off the track. The tires are 32 in. in diameter and were taken from plate-center coach wheels. The hubs are those which came with the automobile, and the spokes are of wood. The wheels weigh about 150 lb. each. The car, complete, with all attachments, weighs about 4,000 lb.

Just inside of each wheel is a flanged shoe fixed to the

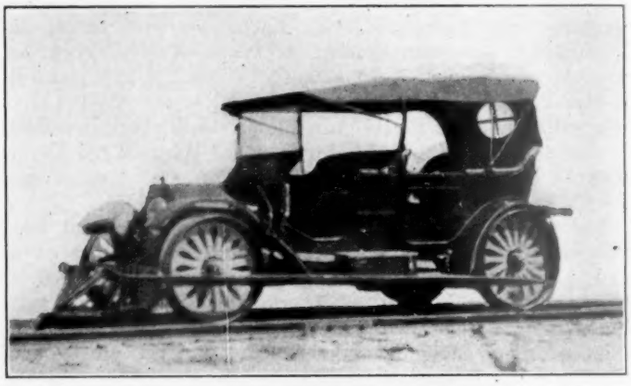


Flanged Shoes to Safeguard Car if Derailed

axle in such a position that if a wheel should jump the track, on the outside, the shoe would engage the rail before the wheel would come down to the ties; while the wheels of the other side of the car would be running on the ties inside the rail. It is expected that the flanges would hold the car on the roadbed and prevent it from slewing before it could be stopped.

The car is fitted with an icebox, a trunk and other conveniences, and also carries a portable telegraphone with which by means of a "fish pole," communication may be opened with the train despatcher at any point.

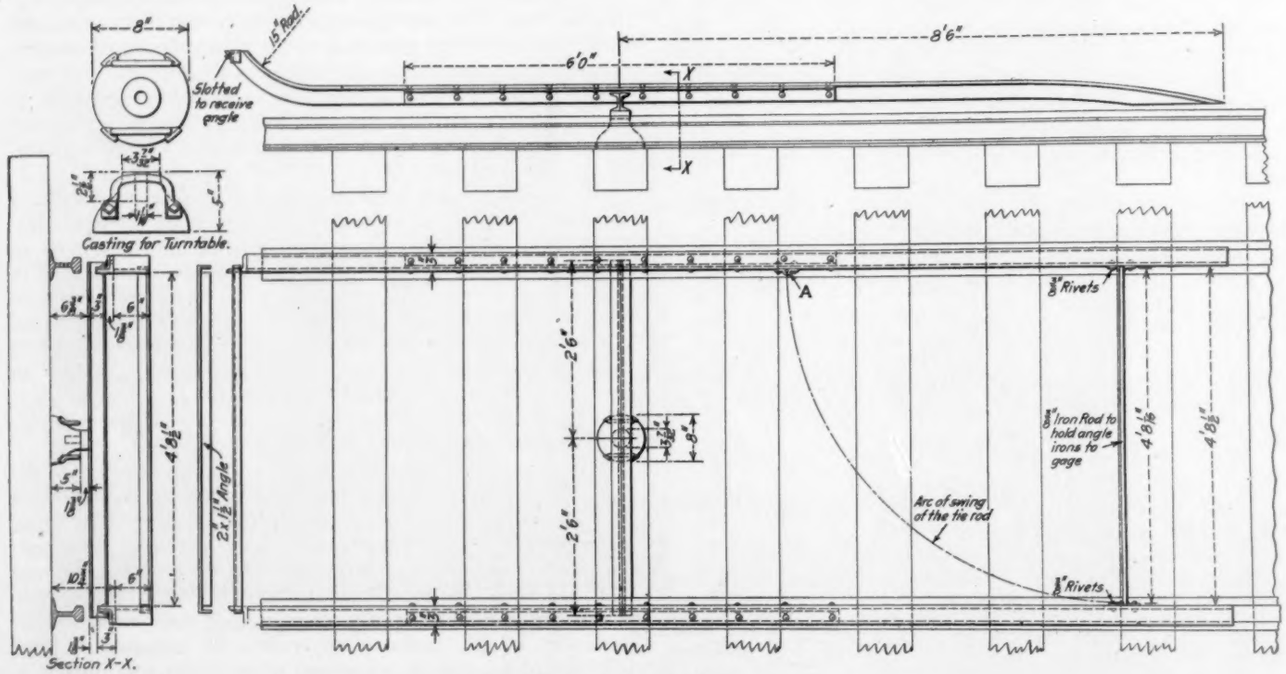
A turntable has been built for use in turning this car and it is taken apart and carried wherever the car goes. One of the members of this table may be seen in the photograph, supported on the side of the car by means of hooks, one fastened to the pilot, and the other fastened to the frame just in front of the rear wheel. Just above this longitudinal member, and back of the tool box (showing



Automobile Converted for Use as Inspection Car

white) may be seen the transverse members of the turntable.

The line drawings show the general construction of the turntable. The main longitudinal members are angles, 3 in. by 3 in. These beams are curved at the end. These members are held to gage at the right hand end by an iron rod ⅜ in. in diameter. When the table is not in use this rod is swung back and fastened in a socket at *A*. The central transverse member of the table consists of two channels riveted back to back. The casting, supporting the table at the center and resting on a tie, weighs about 40 lb. The car is easily turned by two men.



Portable Turn Table for Automobile Railway Car

For the foregoing data we are indebted to C. M. Scott, superintendent of the road at Phoenix, Ariz.

Clearing House for Inter-Railway Accounts*

Instead of Settlement of Each Road With Every Other Road One Debit or Credit Would be Made Against Each

By T. H. B. McKnight
Treasurer of the Pennsylvania Lines West

IT is the general experience in every institution, corporation or business establishment which has had a great growth, especially if the increase has been rapid, that methods which were quite adequate in the beginning are outgrown later and have to be changed and adapted to the enlarged business they must carry, or, insufficient and out of date, they prove an absolute handicap. It is especially true in the case of the railroad business, which requires a great deal of machinery to handle the various relations between the more than a thousand operating companies on this continent. If we go back nearly three-quarters of a century we find the few railroads then existing in the United States independent and unconnected, and even when they began to touch each other such things as through billing and coupon tickets were undreamed of, so that the inter-company settlements required were but few in number and confined to the roads close at hand, and the ordinary method of making a separate payment for every amount due another company was quite sufficient and not at all burdensome.

At the present time, however, the relations between railroad companies have become much more complex and companies whose roads are separated by thousands of miles have very frequent business transactions, owing to the fact that freight cars travel with their loads over many roads from one side of the continent to the other, earning revenue on every mile of their complicated itinerary and liable to incur bills for repairs on any line over which they are hauled; freight is billed over many lines, and through tickets are sold covering thousands of miles of travel, with coupons to be detached by each railroad and collected back from the initial road, and mileage books are sold by one road whose coupons are honored by hundreds of other roads and collected back each month. These and other inter-company relations are taken care of by the accounting officers with accuracy and despatch by improved and modern methods, but the money part of the settlements is still generally handled in the old way, by individual settlements—the per diem, freight and ticket by separate drafts for balances and the car repair and other bills by vouchers payable through bank or paid by checks.

The vast number of these settlements made every month can only be realized by an investigation into the number of drafts and vouchers made and paid by each company. Settlements of this kind are made at considerable expense, not only to the company itself but to the banks with which it does business and which have to collect these drafts and vouchers, often on out-of-the-way points, causing not only delay but often expense in getting in the money involved, which delay and expense of course must be ultimately, in some form, borne by the company for whom the work is done. This collection is not done without risk of loss, as very often the cash papers have to be forwarded for collection through banks that are not financially strong and may fail before they account for the amount of the drafts or vouchers collected by them.

The settlement of adjusted balances alone by the present method is very expensive, much more so than one who has not looked into the practice would readily believe. The charging and crediting of amounts due from and to other companies on per diem, freight and ticket accounts in the proper ledgers, the entering of the balances in the balance book, the drawing and signing of the drafts, the endorsing and recording of the drafts in the cash book and deposit slip by the treasury department, and the charging up and paying of drafts of other companies and entering them in the cash book and ledgers, make a vast deal of work when the number of draft settlements made every month by each company on the continent is considered. To this should be added the cost of making, entering, paying and recording the vouchers in favor of other companies for miscellaneous bills and the collecting and crediting payments of the same kind from other companies. Altogether the expense under the present methods of the millions of inter-company settlements made each month is appalling in these days when economy is the watchword, and when, to make a showing of net income at the end of the year, it is positively necessary to cut off every avoidable expense.

The question then is, are the expenses incidental to our present financial methods unavoidable, or is there some better and simpler way?

The Society of Railway Financial Officers thinks there is a better, safer and less expensive way of conducting our settlements, and that it lies in following the example of the banks, which in every city of any size have established a clearing house through which thousands of checks may be taken care of at one time and place by balance settlement, instead of having them paid in cash over the counter. It proposes a central or general railway clearing house which shall adjust in one settlement each month all the inter-company adjusted indebtedness reported to it by the accounting officers of the various transportation companies, so that on a certain day every month each company's treasurer will receive one check or pay one draft, which will settle all indebtedness between his company and all other companies which has accrued or been adjusted since the last month's settlement.

This plan will certainly simplify very much the duties of the treasurer, as he will know some time in advance whether he is to pay or receive, and how much, thus enabling him to finance on a smaller cash balance than is required under the present system.

The clearing house as it appears to the raptured view of the financial officers is planned in a general way as follows:

The railway clearing house would be established under the auspices of the Association of American Railway Accounting Officers and The Society of Railway Financial Officers and would be managed by a board of directors consisting equally of members of those organizations. The clearing house would be located in a central city, probably Chicago, on account of the mail facilities at such a point ensuring quick receipt of reports from all parts of the continent and equally rapid collection of its drafts and delivery of its checks. The direct management would be intrusted to a well-paid and competent manager who should have such clerical assistance as might be required.

The clearing house would have banks of deposit located in the different financial sections of the country for the prompt and convenient handling of its collections and payments in those districts, which would enable it to collect its drafts without expense and pay the balances due by it in

* From a paper presented at the annual meeting of the Association of American Railway Accounting Officers at Detroit, Mich., June 28, 1916.

funds acceptable to the creditor companies. It is quite possible that arrangements might be made by which the drafts and checks of the clearing house could be handled through the Federal Reserve banks of the various districts, with which all national banks in the district keep accounts. Drafts would be payable only when drawn to the order of one of the authorized depositories and checks would be honored by the banks only when drawn to and collected by a transportation company, making it impossible for the officers of the clearing house to draw out any of the money which would pass through their hands.

The clearing house would fix a day of the month on or before which the amounts to be cleared must be reported to it and at that date the accounting department of each member company would report to the clearing house the adjusted balance to that date between it and each other member company. This balance would include—

(a) Adjusted per diem, freight and ticket balances;

(b) Miscellaneous bills in favor of and against the other company, which have reached the accounting departments duly approved for payment—not to be vouchered but approved, audited and reported;

(c) Bills for car repairs which have been rendered by each company against the other during the month since the last settlement, not to be approved or audited until after payment.

On receipt of these reports of balances, the clearing house would check the balances reported against the reports from the other member companies, either by use of the very large sectional clearing sheet, or with accounting machines, by which the work can be quickly done. There would have to be a day and night force of extra clerks employed for only three or four days each month so that the checking should be completed as rapidly as possible. Where differences appear between the balances reported by any two companies—credit by one and debit by the other—the manager will, if the roads are near at hand, try to reconcile the discrepancy by telegraph or telephone. If this cannot be done he will adjust the difference, which can only be one of two kinds, as follows:

(a) One member company may report a balance due to or by another company which does not agree with that company's report to the clearing house. In such cases the manager will notify both companies of the discrepancy and settle on the smaller figures shown, requesting the companies to adjust in the next month's reports.

(b) One member company may report a balance due by or to another member company and the report of the other company may not show any balance at all with that company. In such cases the manager will cut out the balance reported by the one company and advise it to correct its copy of the report and adjust with the other company before the next clearing day.

There might also be an error in footing balances, making the net settlement balance incorrect. The manager will correct the error and advise the member road.

When all the reports have been adjusted the manager will apportion the expenses of the clearing house for the previous month among the member companies in the proportion the total amount cleared for each (debit and credit balances) bears to the total amount cleared for all companies and will deduct each member company's proportion from the amount of its clearing balance, if in its favor, or add it to the balance if against it, advising each member company the amount of its expense charge and the exact amount of the net balance for which draft will be made or check sent.

Draft will then be drawn upon each debtor road for the net balance due by it and the draft sent to the most convenient depository for collection and credit to the clearing house. As soon as the last draft has been drawn and sent out, checks on the banks most convenient for them will be made to the order of the creditor companies for the amounts of their net balances, and when the last check has gone there will remain in the clearing house not one penny beyond the working fund—as the debits and credits will exactly balance each other.

As most companies have their principal dealings with a few roads directly connecting and as it might inconvenience them to wait until settlement day for the large balances due by these roads, which probably would never exceed ten in number out of the thousand with whom they might have settlements, and as they might prefer to settle balances with these neighboring companies outside the clearing house and receive or make payments on account, it would be provided in the regulations that each member company should put into the clearing house for settlement just what it preferred and keep out for direct settlement just what it pleased, the question of what should be settled through the clearing house and what settled direct being decided between each two member companies.

The manager of the clearing house would have no means of knowing what the balances reported as due between any two companies covered—the clearing house would be only the mill to grind the grist poured into its hopper by the accounting departments of the member roads. This flexibility and secrecy should remove any objection which companies might have to using the clearing house for settlement of their balances with other companies.

It might be advisable to commence the clearing house only with settlement of adjusted balances, for which drafts are now drawn as soon as they are ascertained notwithstanding the fact that the other balances to be ascertained and drawn for a few days later may be the other way. It would seem quite possible to get these different balances ready for settlement at one date instead of having them reported at different dates as now. Later there should be no difficulty in including miscellaneous bills which have been approved for payment by the proper officers, and also car repair bills rendered but not approved or audited, as they are generally small and, if found incorrect, can be billed back and adjusted in the next clearing. The use of the forms of notice, of which a copy would be kept to form the basis of the journal entries, should protect the company from any danger of having to pay a bill a second time.

Instead of charging and crediting balances to other companies in the ledger a journal entry would be made each month charging the clearing house with the total of the balances and miscellaneous bills due by other companies and crediting the clearing house with the total of all balances and miscellaneous bills due to other companies included in the report to the clearing house. This would make a great reduction of work in the accounting departments and result in a great saving to each company, for careful investigation has shown that each road's proportion of the expense of the clearing house would be ridiculously small compared with its present expense of settling its inter-company indebtedness.

The questions that will naturally be asked about the proposed clearing house are: Is it practicable? Can it be made safe? Will it prove really economical?

Upon the answers to these questions the ultimate establishment of the clearing house will depend.

The railway clearing house is not different in principle from the bank clearing houses, which have proved themselves not merely practicable but indispensable, the chief difference being that the bank clearing house settles an unlimited amount of checks between a very limited number of members, whereas the railway clearing house would settle but one balance between each member and every one of an almost unlimited number of other members; and whereas the clerk who represents his bank at clearing house never

knows until he has completed his round whether he will come out debtor or creditor or how much, the railway accounting officer knows when he makes his report to the clearing house just what his company will receive or pay, barring errors. The function of the clearing house is simply to offset debit balances against credit balances so that only the net balance of all the railroad amounts will remain to be settled in one draft or check, and this apparently cannot be accomplished in any other way than by a central agency outside the railroads themselves.

There are no problems in the question that defy solution and a little study shows the clearing house to be a very simple and beautiful piece of financial machinery that, once it has been started, will work smoothly and to the satisfaction of every one—so much so that the wonder will be why there was so much delay in establishing it.

The greatest difficulty was to find a speedy and accurate way of checking the report from each road against the report of every other road, the clearing sheet involved in settlements between a thousand or more members extending to huge proportions and requiring to be handled in sections. It has been found, however, that this comparison of figures in the different reports can be made by means of the card bookkeeping machines in use in many railway accounting offices, without the use of the clearing sheet and with a great saving of time and labor, and this removes the difficulty in the working of the clearing house, so the first question can be answered positively in the affirmative.

There is no doubt at all that the operation of the clearing house can be safeguarded so there can be no possibility of loss—the following ways being suggested:

(a) Drafts on other companies will only be payable when drawn to the order of and deposited in one of the authorized banks of deposit and the banks will be directed to honor checks of the clearing house only when made in favor of a transportation company. If deemed advisable, payments to the creditor companies could be made in drafts on the debtor companies, so that the clearing house would handle no money at all.

(b) All officers of the clearing house will be bonded in surety companies.

(c) If any member company gets into difficulties and goes into a receiver's hands the clearing balance may be in its favor and the acceptance of the check will of course pay all its clearing house debts. If the balance should be against it and draft should be declined the amount of the dishonored draft, being for a balance, would be less than the various claims against the company would have been but for the clearing house. As the clearing house would keep accounts settled up to date they would all come within the six past months for which a receiver is authorized to settle and probably there would be no ultimate loss. In any event, the worst that could happen would be that the clearing house would clear back in the next month all amounts due to and from the failed company, thus putting the other companies in exactly the same position they would have occupied had there been no clearing house—no better and no worse.

It has also been found quite feasible to have the clearing house as a whole bonded by a combination of the larger guaranty companies who would immediately pay into the clearing house the amount of any draft that might be refused and assume the collection of the amount.

There can be no doubt that the railways will be at least as safe in making their settlements through the clearing house as they are under present methods—probably more safe.

In reply to the question, "Will it prove really economical?" the answer is very positive. It will result in very large savings to the member companies—how great it is impossible to estimate for each company because the expense of present methods is not known accurately.

The cost of a clearing house which would adjust and settle balances for a thousand companies would probably not be over $50,000 a year, but, granting that it would be $100,000 a year, that would be an average of $100 a year for each company, much less for the small companies and more for the large ones. In addition to the saving that would be effected in the bookkeeping of the accounting and treasury departments there would be the saving from the fact that a smaller bank balance would be sufficient to carry on the business and more interest could be realized on the current bank balances when the banks were relieved of the labor and expense of collecting such large numbers of drafts and vouchers all over the country—probably to say that there would be an average saving of $1,000 a year to each member company, or ten times the cost of the clearing house to it, would be a very modest estimate.

It remains now only to consider the objections that have been raised to the clearing house plan:

First objection: "The settlement through a clearing house would cause some delay in getting the money due the company." True—if no method can be found for getting the later found balances out as early as the others the settlement will have to be held until they are available, but it is probable that arrangements can be made to get the figures for per diem, freight and passenger balances out at the same time. If not each company has the privilege of settling its few big balances, which would be with neighboring companies and not expensive to collect, outside the clearing house and putting through that institution its small settlements with hundreds of companies all over the country which are the ones that cause the trouble and expense, thus getting the bulk of its money as soon as now.

Even if some slight delay in collecting should be caused it would be as much of a benefit to the debtor companies as it would be an inconvenience to the creditor companies—and as the company that is creditor at one time of the year might be debtor at another time there would probably be no great gain or loss to any company if the clearing house settlement should be slightly later than under present methods.

Second objection: "The clearing house might have difficulty in collecting its drafts in such times as we had in 1907." In any kind of times the clearing house collections on any particular point being for balances only, would be less than the companies would have had to collect individually were there no clearing house, and with its big banks in each section of the country it would probably have no trouble. Besides, it seems safe to say that with the Federal Reserve bank system such a money panic, with its attendant difficulty in collecting, will never come again, and the district reserve banks, also working on the principle of the clearing house, are developing a system which will make collections both safe and inexpensive at any and all times.

Third objection: "The business of a railroad might be revealed to a rival road by the employes of the clearing house." No information would be given to the clearing house on the report of the company except the amount of the balance due to and by other member companies and it could not be known whether the balance was composed principally of freight, passenger or per diem business. In fact, a great deal more information passes through the banks every day under present methods in the shape of drafts and vouchers, and no harm results.

In conclusion, I beg to say that the members of The Society of Railway Financial Officers have been studying the clearing house question for the last nine years, ever since 1907, in fact, and are satisfied that it will prove practicable, safe and economical to a great degree, and are enthusiastically in favor of having the railway clearing house organized and put in operation at an early date. They realize, however, that it cannot be successfully started or operated without the co-operation of the accounting officers.

FEDERAL TRADE COMMISSION RECOMMEND GOVERNMENT POOLING OF TRANSPORTATION AND COAL

Declaring that the United States is threatened with a serious shortage of coal, largely because of failure of the transportation system, the Federal Trade Commission, in a report to Congress on June 20 of its investigation of the production, distribution and price of anthracite and bituminous coal, recommended that for the duration of the war the production and distribution of coal and coke be conducted through a pool in the hands of a government agency and that the transportation agencies of the United States, both rail and water, be similarly pooled and operated on government account under the direction of the President. The commission also recommended that all such means of transportation be operated as a unit, the owning corporations being paid a just and fair compensation which would cover normal and net profit, upkeep and betterments, and suggested that the operation both of the mines and of transportation could be carried on by the present employees and officers, the properties to be returned unimpaired to private operation after the war. The commission believes that "the coal industry is paralyzing the industries of the country, and that the coal industry itself is paralyzed by the failure of transportation."

In its letter submitting the report to Congress the commission said in part:

In the anthracite industry, the commission has elaborated a system for tracing the coal from the point of its production on through all intermediate hands, and finally to its point of consumption. Weekly reports are required from producers and jobbers, wherever needful, with the result that, as regards domestic sizes, high-premium coal has largely been eliminated from the market and speculation and inordinate profits have been cut out in the wholesale trade in these sizes.

During the first two months of the coal year of 1917 (April and May) there has been an increase in the production of anthracite of 2,433,000 tons as compared with the first two months of the coal year of 1916. This is an increase of 24 per cent, and should have been translated into a distinctly favorable condition of the market.

However, faulty rail and water transportation and conditions in the bituminous industry and in the production, control, distribution, and use of coke have been such that much of the gain which should have been secured by the efforts of the commission, aided by the intelligent and willing cooperation of a great majority of the interests engaged in the production and distribution of anthracite coal, has been lost—this for the reason that though the anthracite market has been filled with a supply which should be adequate for its normal use, the acute shortage of supply in bituminous and in coke, together with faulty distribution and speculation, have driven bituminous and coke prices up to a point which has put anthracite into competition with the other two forms of fuel.

The stores of anthracite coal which now should be accumulating against next winter for domestic use are being used for steam-making in the place of bituminous coal; are being used in various manufacturing processes in the place of coke, and are being used by public service corporations for the production of water gas, because such anthracite is easier to obtain and at favorable prices as compared with bituminous and coke.

Whatever measure of success has marked the efforts of the commission with relation to anthracite coal has been largely because the car supply has been adequate by reason of the close corporate relation between rail transportation and anthracite production.

Quite the contrary condition exists with relation to bituminous and rail transportation and with relation to water transportation as to both kinds of coal.

The production of bituminous coal for the first two months of the coal year of 1917 (April and May) has shown a large increase, but not nearly so large as the increase in industrial consumption and not nearly so large as the possible and economical output of mines already opened and in partial operation.

The present production of bituminous coal, the country over, is about 40 per cent short of the possible maximum, and this limitation is solely to be charged, as to primary cause, to faulty rail transportation. The present demand for coal is unprecedented, but the mines now open are capable of filling this demand if adequate car supply is furnished.

It is a fact in the bituminous industry that the capacity of a mine for production and the capacity of labor is limited absolutely by the supply from day to day of coal cars for the moving of the product. Thus we have found that, with the market at unheard of prices, labor is often standing idle at the mines and production is limited as compared with the possible productive capacity.

In fields where there is now a more nearly adequate car supply the irregularity of car supply in months past has so disorganized and discouraged labor that these mines are not now nearly at full capacity of production.

The commission believes that there are enough coal cars in the country but that there are not enough coal cars delivered to the mines, and that, an inadequate supply having been delivered to the mines and loaded, these cars are not moved to the point of consumption either with the greatest of expedition nor are they promptly discharged upon their arrival at their destination.

The commission has much testimony of widespread abuse in the use of coal cars by speculators for the storage of coal for speculative purposes, and that the practice of reconsignment is wasteful and a cause of delay and market manipulation.

The Commission finds that the coal is not sent to the point of consumption by the most direct route, and that coal cars are being used for transportation of many other sorts of product.

The undue prices at which coal can be speculatively sold has resulted in the opening up of temporary and inefficient bituminous mines, called in the industry "snowbirds" or "wagon mines." These temporary and uneconomical mines now secure part of the inadequate number of cars allotted by the railroads to the coal industry. They have none of the usual loading facilities, and the cars are often held at such mines days in the process of loading when a properly equipped mine could load them in a few minutes. The operation of such mines curtails production and is an economic waste at this time.

Experience has shown that, in the United States, the normal balance in transportation which brings about a maximum of production with maximum economy, occurs when out of every 100 tons of originating freight approximately 56 tons are unmanufactured mineral products and 44 are manufactured products, foodstuffs and other commodities, and when of the 56 tons of mineral products 35 tons are coal. Of these 35 tons of coal the railroads themselves consume about 12 tons.

The present balance of transportation is a great reduction in the proportion of the cars furnished for the transportation of coal. The railroads, however, are consuming their full quota of coal, so that while under favorable and natural conditions 35 tons of coal would be moved, out of each 100 tons of freight, there is now being moved very much less coal. The entire coal shortage is thrown upon the industries of the country and the domestic users, who, instead of having a coal supply equal to two-thirds of the total coal

movement, are reduced to a small and continually diminishing ratio, and this in a time when every effort is being made to stimulate the industrial effectiveness of the nation.

The coal problem cannot be worked out so long as the railroads are permitted to divide and allot traffic; to lay embargoes without regard to their immediate effect upon industry or upon the systematic distribution of coal; to give priority to the movement of high-freight rate commodities, and to use the device of "long haul."

During the spring and summer months there should be building up in those parts of the country most remote from the coal-producing states stocks of fuel in the hands of industrial consumers, in the hands of state institutions, of public-service corporations and domestic consumers. This storage is not now taking place, but it must be made during what remains of the summer unless the country is to face next winter a most serious and, unless immediately corrected, an irreparable situation.

The situation in New England is made acute because of the disruption and disorganization of barge transportation. The cost of the water haul from New York to Boston has been increased from 50 cents a ton to as high as $3 a ton. From Newport News bituminous coal is paying $3.50 to $4 per net ton instead of the normal of 70 to 90 cents to New England.

On the Great Lakes it was the custom for ships which carried grain and ore down the lakes to carry cargoes of coal up to the Northwest. During the summer of 1916 many ships which brought down ore and wheat went up the lakes in water ballast, taking no coal. Thus they made three round trips earning high rates on freight one way during the same time that would have been consumed in making two round trips carrying cargoes both ways. This practice was pronounced in the late summer and autumn of 1916, and the result was so serious that when navigation opened this spring the Northwest was facing an actual coal famine. This evil condition has already begun this year, and if persisted in the coal famine which threatened that part of the country in the winter of 1916-1917 will be an actual coal famine in the winter of 1917-1918.

The serious condition as to anthracite at the present time is not a matter of production. It is rather the fact that anthracite at the present moment is being diverted from its ordinary use and storage to compete with and take the place of bituminous coal and coke in the industries. Frequent embargoes also disorganize well-laid plans for prudent distribution and encourage the diversion of the anthracite from its proper and normal channels.

All sorts of processes of manufacture are now struggling under the costs which they are compelled to pay for fuel. They are in the open market bidding for a share in an inadequate supply of fuel. That supply is inadequate because it is unnecessarily limited by transportation conditions. The prices of coal to railroads and other large consumers have generally increased from 100 to 150 per cent, while prices to small consumers have often increased as much as 200 to 400 per cent, and in some cases even more. The high prices and uncertainty as to coal supply are embodied in contracts and prices for substantially everything, and are a prime cause for the inflation which is so rapidly growing into a national menace. The steam railroads themselves are basing their arguments for a 15 per cent increase in freight rates in large part upon the increased cost of their fuel, and any increase if granted will be passed on to the public.

Our predecessors in this world war have had to solve the fuel problem which lies at the base of every military and industrial activity. They have tried various experiments and their failures and successes may well guide us in our search for a solution. In England the government took complete control of the coal mines after less radical methods of regulation failed. The French government has divided France into three coal zones in order to equalize distribution, and the government becomes the sole vendor. On May 2, 1917, the Russian provisional government took over all the coal mines of that country with a view to control coal distribution and prices. Soon after the outbreak of the war Germany took measures to still further centralize and control the whole coal industry of the empire under government administration. The Italian government imports all the coal brought into the country and acts as a clearing house for its distribution.

All the nations at war have relieved coal miners from military duty, urging that their greatest service to the state can be performed by remaining at their regular employment. Already, in this country the ranks of the miners are being seriously depleted by enlistment.

Many remedies have been urged upon the commission. Government ownership or at least government operation is argued by many, but perhaps the most common is the suggestion that the government fix prices at the mines. This suggestion has been carefully considered, and it seems clear that unless a uniform price is fixed each ton of coal will have to be followed through to the consumer lest any given ton be retailed at a price based upon the price fixed for the highest cost mine.

If a uniform price were fixed many mines will be shut down unless the price is high enough to make the highest cost mine profitable. Such a price, in operation, might be found unfair as to the public and especially as to the railroads. No remedy will be effective that does not include constant employment to labor and at fair wages; maximum production of all equipped mines; fair profits to all mine owners; and prompt, equitable and economical distribution to all consumers, both domestic and industrial.

If inefficient mines are closed, so releasing miners to fill the gaps in the ranks of the fully equipped collieries, this shortage can be repaired. It should not be permitted to again become a serious menace to maximum production.

It would seem that steady employment, fair compensation to labor and capital, equitable distribution and stable prices could be secured by pooling all coal and coke production in the hands of the government.

If the producer at each mine were paid his full cost of production with allowance for depletion, maintenance, upkeep and all the usual items, and to this were added a fixed and uniform net profit per ton, with due regard to quality, the coal thus produced at widely varying costs, if pooled, could be sold through the government at an average and uniform price, quality considered, which would be entirely tolerable to the consuming public, and at a price much lower than could be fixed if an effort were made to fix a uniform price to the producer.

The pooling of coal in the hands of a government agency would still be ineffective either as to distribution or as to the promotion of a maximum of production unless similar control extended over all means of transportation, both rail and water, and to meet this the pooling of railroads and boat lines is clearly indicated. The railroads of the country, if operated as a unit and on government account, could be used to transport coal and other products by the most direct route to their point of destination, and the efficiency of the roads themselves, and of existing rolling stock and of motive power, would be vastly increased.

Our allies and Germany all require the railroads not already government-owned to be operated as a unit and on government account, and the allies have officially stated that one reason for being certain of victory was that transportation had been reorganized and perfected.

For the purpose of operation the several railroad lines and systems and inland and coastwise water transportation of the United States would, under the plan here suggested,

lose their identity and could be coordinated into a unit for efficiency and economy.

All receipts from all rail and water transportation agencies being pooled in the hands of the government, and all expense of operation paid from the common fund, each individual company should be paid a just compensation which might be measured by the average annual net profit and expenditure for maintenance and betterments for the five-year period prior to the war.

The operation both of the mines and of the transportation agencies could be carried on by the present employees and officials, and after the war they could be returned unimpaired to private operation.

The rolling stock of railroads, operated as a unit, could be mobilized so as to care for the shifting seasonal demands.

William J. Harris, chairman of the commission, filed a dissenting report, saying:

I concur as to the findings of fact in the report, and also in the recommendation that the production and distribution of coal and coke be conducted through a pool in the hands of a governmental agency.

I concur with the view that even the above would be ineffective unless government control extended over all means of transportation of coal and coke; but I cannot concur with the view that this should be brought about by pooling all transportation agencies in the United States, both rail and water, on government account, "the owning corporations being paid a just and fair compensation which would cover normal net profit, upkeep and betterments." The adjustment of claims for "upkeep and betterments," besides compensation for the use of the property during the war, would be so difficult and such a tremendous task that this plan should be adopted only as a last resort; and before it is given a trial I recommend that during the war the President be authorized to order rail and water transportation agencies to give preference to shipment of coal, coke and other commodities in the order of their importance to the public welfare.

NEW FREIGHT TERMINAL WAREHOUSE AT CLEVELAND

A new 10-story reinforced concrete terminal warehouse, served by the Cleveland, Cincinnati, Chicago & St. Louis, will soon be completed at West Ninth and Main streets, Cleveland, Ohio. The structure is of special interest because of the nature of the service which it will render in handling freight from the low level of the principal freight tracks in Cleveland direct to the tail board of trucks at the general level of the city within a few blocks of the wholesale and retail districts. At the same time it will provide about 6,000,000 cu. ft. of fireproof storage space equipped for the mechanical handling of freight from the cars or from any part of the building. The general level of the freight tracks in Cleveland is about 60 ft. below the principal streets. This has made it necessary in the past to truck freight up and down steep grades to and from the freight yards located in various parts of the city.

The new warehouse consists of a six-story and four-basement building, about 142 ft. by 214 ft. in area and a six-story and one-basement building 70 ft. by 256 ft., joined together by a connecting wing. Eight house tracks serve the fourth basement and extend the whole length of the building with wide platforms and six elevators between the tracks. The building is accessible from the high level by means of a 50-ft. driveway along three sides of the building, which presents platform space for more than 60 street vehicles at one time. The house tracks have a capacity of about 60 cars.

The total ground area of the building is about 500,000 sq. ft. The structure is designed for floor loads from 200 to 500 per sq. ft., and for two future additional stories. All floors are of flat slab construction and the columns below the second floor level are reinforced with structural steel cores. The curtain walls are of 8-in. tile, veneered with vitrified paving brick. All floor finish is concrete. Floors put in during the summer months were placed monolithic; those placed during the winter months were cast separately.

The building is owned and will be operated by The Ninth Street Terminal Warehouse Company, which has leased two floors to the railroad for its exclusive use. The railroad will have exclusive control of the several elevators serving the two floors used by it and which are entirely separate both in location and operation from those to be used by the warehouse company. The latter will maintain a cold storage department, the handling of supplies between cars and cold storage to be accomplished without exposure to weather conditions. In its general warehouse areas, the company will rent varying sized rooms to tenants and will also utilize certain areas for the usual warehouse practices, including bonded goods.

To expedite the handling of freight between the different levels in the building, gravity carriers and vertical lifts are provided in addition to elevators. To facilitate the handling of the more bulky or heavy shipments a monorail system extends along each track platform, with which single pieces

Progress of Construction on January 16

not larger than 8 by 24 ft. and not weighing more than 8,000 lb. may be picked up, handled over an elevator which accommodates the monorail carriage and its load and delivered onto any of the first six floors of the building or set upon the bed of wagon or truck at the driveway platform.

The terminal warehouse company will handle all goods moving in either direction between the railroad or teams at the building and its tenants' space in the building. Goods so handled will be delivered to or received from tenants on a gravity carrier or a multiple platform. When handled in quantities sufficient to justify their use, gravity carriers may be used. Otherwise multiple platforms handled by electric lifting trucks will be used in this service. The Turner Construction Company of New York City was the general contractor on this work. Construction was started in April, 1916, and is now practically completed.

BERLIN SHOPMEN ON STRIKE.—Press despatches state that two-thirds of the workmen in the great Berlin shops of the Prussian State Railroads have gone on strike to enforce their demands for a nine-hour day. The men, who had been compelled to work eleven hours daily, declared it was impossible for them to labor such long hours on inadequate food. According to Vorwaerts, the other third of the employees are expected to join the movement. The German railroad unions are said to have voted to support the car shop employees in their demand for a shorter day and also for a wage increase.

Convention of the Freight Claim Association

Sessions Devoted to Proposed Changes in Rules Affecting Apportionment of Claims Between Connections

THE Freight Claim Association held its twenty-fifth annual convention at the Hotel LaSalle, Chicago, on June 19, 20 and 21. The meeting was well attended, considering the fact that the country is at war; 194 of the members were present or represented. The association has shown a substantial growth since a year ago, now having a total membership of 495 as compared with 475 in May, 1916. The first day's session was opened with an address by the president, W. O. Bunger, who called attention to the fact that the association had just completed a quarter of a century of existence and pointed to the difficulties of interline claim handling prior to the formation of the association and its arbitration committees. The remainder of his address is quoted in part as follows:

President Bunger's Address

"The year has been notable for the holding of the first special session since the Cincinnati special meeting of 1906, at which the direct investigation and arbitration charge practices were adopted. Efforts have been made at practically every session since that time to agree upon a definite rule for the apportionment of claims on perishable freight, and numerous committees on loss and damage rules have wrestled with the subject without being able to prepare anything to which the association could give its approval. It was finally recognized as a subject to which sufficient time could not be given at a regular session, and at the last annual session the subject was referred back to the committee on Loss and Damage Rules with instructions to hold an open special meeting of the committee, which was followed by the December special session of the association, at which time the present rule No. 164, was adopted. The rule has been in effect too short a time for a determination of its value and except for possible corrections of verbiage, or of glaring inconsistencies or errors, if any are now apparent, it seems to me that it would be extremely unwise at this time to tamper with it.

We have made mistakes in the past by attempting to cure imaginary ills in other rules before the symptoms were fully developed, with the result that we were worse off than we would have been had we waited to cure a real ill instead of devoting energy toward the cure of an expected one. In fact, I counsel more than ordinary conservatism in our deliberations at this meeting for the reason that we have not our usual assurance of being able to get together one year hence to undo what we may wrongly do at this time, and we shall undoubtedly be safer in an extended application of present known rules than we could possibly be with experimental amendments or changes, except in instances, if any are found, of clearly apparent conflicts or irregularities.

"The association is confronted by two very serious questions, or perhaps I should say two widely divergent angles of one serious proposition. Because of the unfathomable possibilities of the coming year we should give serious consideration to the possible inability to hold a session of the association for one or more years, and we must also recognize the possibilities of the same causes bringing about conditions which may require extensive changes in our practices. It is my thought that if the last-named conditions should arise we should not hesitate to hold special sessions if necessary to keep our association and our work abreast of the times; but that if nothing requiring special action arises out of the chaotic conditions now developing rapidly, we should prepare for a possible abandonment of our annual sessions during a part or all of the duration of the war, by such provisions as may be necessary to insure the legality of the rulings of our arbitration and appeal committees and the continuation of the terms of the elective and appointive officers beyond the constitutional time.

"The only committee of which I will make special mention is that on cause and prevention. Through the excellent efforts of that committee and of similar committees of other bodies interested in the matter of prevention of loss and damage to freight, and through the efforts of individual carriers, practically all of whom are showing special interest in the subject, more has been accomplished in the prevention of claims in the last 2 years than in the preceding 10 years. It seems almost providential that the work was taken up in a really serious and determined way when it was, for the reason that while the present unfavorable conditions may show increases in loss and damage cost beyond what it was a year ago, no one can imagine what it would now be amounting to if the preventive work had not been so generally undertaken. The greatest mistake that could possibly be made would be to allow the preventive work to lag. On the contrary, it is the time to redouble the efforts to fight the causes, and a continuation of assistance and helpful suggestions to our committee is urged. The conservation of products of all sorts so strongly urged by the government can be well served in that way, and it is not improbable that by properly directed efforts something may be accomplished towards insuring the better preparation of freight by the shippers . . . ."

The Holding of Meetings During the War

In line with the president's suggestion, the association passed emergency rules to take care of the contingency of a suspension of meetings in the event of an indefinite prolongation of the war. Accordingly, the decision as to the advisability of holding meetings was left to the discretion of the executive officers and the chairmen of the standing committees. Officers and members of committees were authorized to continue in office until the next convention, whether held at the regular time a year from now or later.

Changes in Constitution and Rules

Most of the time of the convention was devoted to a discussion of proposed changes in the constitution and rules of the association.

One of the constitutional changes made by the association was to provide an effective penalty for delay on the part of a carrier interested in a claim dispute to forward the claim papers to the next interested carrier, or for losing the papers outright. According to the amendment to the section of the constitution in question (Section 8, Article VII) a carrier shall be adjudged in default of the full amount of the claim if it fails to forward the papers within 30 days after receiving notice from the carrier asking for arbitration.

One of the most important actions taken was the adoption of a rule previously agreed upon by a committee of the association and representatives of coke and coal-carrying roads to govern the investigation and apportionment of coal and coke claims. It is expected that the adoption of this rule will result in these roads joining the Freight Claim Association.

It was pointed out that in making an investigation direct over other lines considerable difficulty is experienced in securing the specific information required to dispose of claims. Quite frequently the responses are made in a perfunctory

way and the information given is of little or no value. To remedy this situation Rule 28 was amended to provide that when an agent or other proper representative of another carrier fails to furnish specific information requested or explain why he cannot do so within 20 days after date of inquiry, copy of the inquiry with a request for reply shall be sent direct to the freight claim officer of the delinquent carrier.

Special Astray Freight Waybills

The association endorsed the recommendation with reference to the handling of astray freight of the committee on methods, accounts and forms to the standing committee of the Association of American Railway Accounting officers for a conference with the Freight Claim Association. The committee recommended that astray freight should be forwarded to marked destination on a distinctive form of waybill but that no freight charges should be shown thereon by the billing agent. Although the association went on record as admitting its lack of jurisdiction to prescribe a form of waybill, it nevertheless went on record as favoring a distinctive form of waybill without billing charges thereon, on the ground that it prevents the delivery of astray freight without proper proof of ownership and eliminates unnecessary delay in delivery resulting from the billing of charges against astray shipments.

In connection with Rule 258, providing that no charge shall be made by the carrier settling a claim against another carrier when the entire proportion beyond the settling carrier is less than one dollar, it was pointed out that considerable difficulty was experienced in disposing of claims for small amounts where non-member carriers are interested. Accordingly, the following proviso was added to the rule:

"When a non-member line is involved Freight Claim Association minimum debit rule should apply between member lines."

To comply with the rules of the Interstate Commerce Commission governing the classification of the operating revenues and expenses of steam roads, which provide that carriers' tariff charges on lost, destroyed, or damaged shipments for which charges neither consignee nor consignor are liable, shall be charged to the revenue accounts previously credited; a motion was passed requiring that space be provided in the association's standard form of loss and damage distribution statement so that information can be entered thereon as to whether or not there were any freight charges included in the claimant's bill on loss and damage claims. No carrier, however, will be required to use the new form until it has exhausted its supply of the present forms.

Definition of a "Check"

To establish clearly what constitutes a "check" which may be used as a basis for prorating in accordance with the provisions of the association's rules, the following definition was adopted:

"Check: the determination, by an authorized representative of the quantity and condition of freight received, loaded, transferred or delivered, by actual handling and examination of the freight."

H. C. Pribble, general claim agent of the Atchison, Topeka & Santa Fe, proposed to amend the definition to include inspection of freight in transit as a check for prorating purposes, but the general consensus of opinion was that an adequate inspection cannot be made en route unless a car is unloaded. Inspection in transit was commended as a means of remedying defects in packing or bracing, or of determining whether repairs to the car itself are necessary.

Rule 64, requiring that cars shall be inspected before loading, was amended to read "car shall be inspected by carrier furnishing the equipment before each loading." The old rule was interpreted by many to mean that shippers' inspection was permissible. It was the majority opinion that shippers are not qualified to pass on the adequacy of equipment.

The following new rule (No. 73) was adopted regarding the checking of package freight: "Package freight transferred en route must be checked. If transferred, a record placed on the waybill shall be sufficient, provided it is shown affirmatively that the shipment was actually checked. Failure to show check shall render the transferring carrier liable for any loss or damage developed by the next subsequent check, regardless of seal records, provided it is not shown that such loss or damage existed prior to the aforesaid check."

Several letters were read which called attention to the lack of safeguards against the collection of claims for lost shipments which are delivered as astray freight. As an example of how this sharp practice is carried on by shippers, the following typical case was cited: Ten packages, numbered serially, from No. 1 to No. 10, are shipped, and these numbers are shown on the waybill, but on delivery at destination one package checks short. Later one package arrives at destination and is delivered free astray, but no record is kept of the serial number and no bill of lading or copy of invoice is required to prove ownership of the package or to identify the package. The shipper then asserts, in connection with his claim, that the consignee received a package, but not the one belonging to the particular shipment in question and this cannot be confirmed or denied. As a remedy, the following new paragraph was added to Rule 100:

"If delivered on presentation of original bill of lading the delivering agent shall immediately report the facts to the agent issuing the bill of lading and shall request him to take record on his shipping order or office copy of billing of the fact that such astray freight delivery has been made, or if delivered on other proof of ownership delivering agent shall make reasonable effort to determine the line issuing the bill of lading, and if successful, serve similar notice."

Ruling R-18 which requires the filling out of certain standard forms by the claimant setting forth all known facts connected with the shipment as a prerequisite to the recognition and apportionment between carriers of claims for concealed loss and damage, was assailed on the grounds that it is impracticable to apply the rule in connection with claims for concealed damage or loss on import shipments. The matter was referred to the conference committee of the association to be taken up with the National Industrial Traffic League.

Because of the lack of a provision in the rules to cover loss from tank cars and the resulting difficulty experienced in the apportionment of claims involving loss of this nature, Rule 121 was amended to read as follows:

"When leakage of liquids (in carloads or less) develops en route, the carrier handling the shipment at the time leakage is detected, shall stop the leak, make necessary repairs, or transfer the contents, and ascertain the exact weight. Failure to so repair, transfer or ascertain exact loss by weight shall render the carrier or carriers at fault liable for loss. This provision is not applicable to import oils."

An unsuccessful attempt was made to amend Rule 188 to prohibit the prorating of livestock claims beyond the point where the injured or dead animal was removed from the car. It was argued that death or injury to cattle could not be definitely ascertained except by removal from the car.

Rule 223 was modified to specify more fully the responsibility of destination carriers for the collection of correct charges and to conform more closely with the rules of the Association of American Railway Accounting Officers.

Loading Automobiles

Among the recommendations of the committee on cause and prevention, which were approved by the association, was that closer attention be paid to the loading of automobiles, as considerable claim money is being paid out by carriers because of insufficient protection to automobile shipments.

The committee urged that when carload shipments of automobiles reaching junction points or destination, show damage due to improper bracing, blocking or loading, the line discovering such damage should report immediately to the loading carrier showing, in detail, the apparent cause of the damage. If this is done, defects in loading may be taken up with the party which loaded the car, to secure necessary changes in loading methods. It was also recommended that when inspecting the lading of cars at junction points, necessary repairs should be made to prevent damage which may occur by reason of insufficient, improper, or broken bracing or blocking.

Election of Committees

In addition to the election of six arbitration committees and an appeal committee, a new committee composed of members who handle overcharge claims exclusively, was created for the arbitration of overcharge disputes. Another innovation was the formation of a committee on jurisprudence composed of the appeal committee and the chairmen of the seven arbitration committees for the purpose of establishing principles on the basis of which greater uniformity in the interpretation and application of the rules by the various committees will obtain.

Election of Officers

The officers elected for the coming year are as follows: President, F. E. Winburn, freight claim agent, Atlanta & West Point and Western Railway of Alabama, Atlanta, Ga.; first vice-president, H. C. Pribble, general claim agent, Atchison, Topeka & Santa Fe, Topeka, Kan.; second vice-president, M. E. McKirahan, freight claim agent, Southern Pacific, San Francisco, Cal.; secretary-treasurer, Warren P. Taylor, traffic manager, Richmond, Fredericksburg & Potomac and Washington Southern, Richmond, Va.

WASHINGTON CORRESPONDENCE

Washington, D. C., June 26, 1917.

Government Regulation of Basic Materials Proposed

The report of the Federal Trade Commission, recommending that the government take over the railroads and the production and distribution of coal, does not seem to have been taken very seriously in Washington, so far as the transportation part is concerned, probably because those who are familiar with the questions involved recognize that the commission has not taken the pains to inform itself as carefully as it might have of what has already been done. There has been considerable agitation in Congress for government regulation of the prices of fuel, steel and other basic materials which are of especial importance in war time, but there have been more signs of a tendency to oppose placing too great powers in the hands of the President than of any desire to have the government actually take over the operation of any large industry. Apparently even some of the government ownership enthusiasts have recognized that it is hardly necessary for the government to take over the railroads or coal mines as long as they can be operated practically "on government account" without the necessity for the government taking the responsibility for operation. There is no necessity for the discussion of the government control of railroad charges because that was long ago accomplished, but there is some likelihood that some plan of price regulation of basic materials may be adopted as an emergency war measure, unless it is found that the power of the government to commandeer what it requires is sufficient to enable it to dictate prices which will be satisfactory.

Senator Pomerene had a conference with the President last week on his resolution to authorize the President, through the Federal Trade Commission or other agency, to regulate coal prices and distribution, with power to take over any coal business, if necessary, and he announced afterward that the President was in sympathy with the plan. The Senate Committee on Interstate Commerce has announced a proposed inquiry as to the necessity for regulation of the prices of steel, coal, oil, copper and other raw materials and the first hearing, on coal, was begun today. Chairman Denman, of the Shipping Board, is advocating that the Trade Commission fix prices of steel and the materials entering into its production.

The report of the Trade Commission absolutely ignored the work of the Railroad's War Board, which has been devoting a large part of its attention to providing an adequate fuel supply and which in the short time it has been in existence has already accomplished many of the objects toward which the commission's plan is directed. President Rea, of the Pennsylvania, a member of the War Board, called attention to this fact in a statement on the day after the report was published, saying:

"I regret that at a time like this when the railroads of the country and the shippers are exerting every effort to make railroad facilities of the greatest possible use to the government in the prosecution of the war, the Federal Trade Commission should make such far-reaching recommendations respecting the railroads based on what is evidently an incomplete investigation.

"In view of the work which the Railroads' War Board has accomplished, in co-operation with the government and the shippers, and the benefits already produced through better car loading and more prompt unloading of cars, I cannot understand why the Federal Trade Commission should at this time recommend that the government take over and operate the railroads.

"According to the government's own reports, the railroads of the United States in May, 1917, hauled from the mines, 142,157 more cars of bituminous coal than they did in May of last year, an increase of about 24 per cent—approximately seven million tons.

"Neither I nor any of my associates on the Railroads' War Board have had any communication from the Federal Trade Commission on the subject, notwithstanding we have been in Washington for the past two months carrying out the pledge of the railroads of the country to unify their systems and co-ordinate their operations to produce the maximum of national transportation efficiency."

Under the administration of the War Board the railroad facilities of the country are already pooled and operated practically "on government account" without any government guarantee as to their compensation and the mobilization of their rolling stock, which the commission talks about, is being carried out by orders from the Commission on Car Service, which moves cars about wherever they are required. The first action of the railroad Executive Committee was to direct that preference be given to the movement of coal and ore and not only was the movement of bituminous coal increased 29 per cent in April and 24 per cent in May, but during May the car shortage was reduced about 40 per cent. Arrangements have also been perfected to promote the movement of coal to the head of the lakes, which the trade commission refers to especially, and to New England and other tidewater points.

The coal production committee of the Council of National Defense, of which F. S. Peabody is chairman, also issued a statement commenting on the report of the Federal Trade Commission, declaring that it would be "very unwise to put into effect untried methods that would interfere with the close co-operation that now exists." The statement pointed out that the primary purpose of the committee when it was created was to increase coal production so that an adequate supply would be available, and that how well it has accomplished its purpose is shown by the increased production in May, while the figures for the first half of June show a still

further increase is going on. The statement added that "many remedies to reduce prices have been suggested, but it is the opinion of the committee that the continued increase in production already secured, together with the introduction of wise economies in its use and the discontinuance of unnecessary hoarding, will automatically bring prices to their proper level."

Report of the Council of National Defense

The mobilization of the 262,000 miles of railroads of the country for the nation's defense is given first place in a comprehensive statement of the organization and accomplishments of the Council of National Defense, its Advisory Commission and their various boards, sections and committees, given to the press on Sunday in the form of a report by Walter S. Gifford, director of the council and the commission, to the Secretary of War, who is chairman. Prominent mention in the list of accomplishments is also given to the settlement of the recent threatened national railroad strike and to the organization of the railroad committee sent to Russia and the enlistment of reserve engineer regiments to aid in rehabilitating the railroads of France. All of these except the strike settlement have been accomplished by the Railroads' War Board, listed as a co-operative committee of the Advisory Commission under Daniel Willard, chairman of the Advisory Commission, as distinguished from the various sections and boards of the council itself. Committees on telegraphs and telephones and on electric railways are also co-operating with Mr. Willard, who is in particular charge of transportation and communication.

Regarding the work of the railroad committee, the report says that at the instance of Commissioner Willard the railroads "have been completely mobilized," and that the railroad special committee "has adopted the broadest attitude in connection with the public interest." Then follows an outline of the principal accomplishments of the Railroads' War Board, which have already been described in the *Railway Age Gazette*. In reference to the action of the committee in ordering preference to the movement of fuel, the report says that the committee has certified to the Council of National Defense that in its judgment preference should be given as follows: (1) Fuel for the government; (2) fuel for railroads upon which mines are located; (3) fuel for other railroads, and (4) fuel for other purposes.

The committee on electric railways was organized by the American Electric Railway Association at the instance of Mr. Willard, under the chairmanship of General George N. Harries, and is co-operating with the committee of the American Railway Association.

A close-knit organization of the telephone and telegraph companies to insure the government the most rapid and efficient communication service has also been effected at the instance of Mr. Willard, chiefly through the instrumentality of Theodore N. Vail, president of the American Telephone & Telegraph Company, who acts as chairman of the committee. Elaborate plans have been worked out by which all government calls are given precedence and special service has been arranged. Extensive methods have been devised for special telephone and telegraph systems for the exclusive use of the government and more than 10,000 miles of lines have already been taken from commercial use and devoted exclusively to the government. A very comprehensive system for the War Department has been evolved.

Illinois Passenger Fares

Senator Sherman of Illinois on June 20 appealed to Congress to put an end to the conflict between the federal and state authorities over the question of Illinois passenger fares by introducing a concurrent resolution in the Senate, directing the Interstate Commerce Commission to dismiss its application to the federal court at St. Louis which led to the injunction issued by Judge Dyer against the state authorities and to modify or vacate its own order "in such a way that the status of the parties in the case pending in the United States Supreme Court shall be preserved in accordance with the order of District Judge Landis and the refusal of Justice Clark of the Supreme Court to grant a temporary injunction until said case shall have been finally determined in the United States Supreme Court on or after October 2, 1917."

Senator Sherman asked the Interstate Commerce Committee of the Senate to give early consideration to his resolution because he said Judge Dyer had threatened to incarcerate the state authorities and to disable a portion of the state government in case they attempted to enforce the Illinois 2-cent fare law.

The commission has suspended from July 16 to September 1 the effective date of its order in the freight rate part of the case instituted by the Business Men's League of St. Louis. Both the passenger and freight rates were involved in the original complaint, but decisions were rendered separately as to the passenger rates and as to the freight rates. The postponement of the freight rate order is because the carriers have not been able to prepare tariffs, but the postponement may tend to avoid complications until the situation as to passenger fares has been cleared up.

Candidates for the I. C. C.

The fact that President Wilson probably will soon be called upon to appoint two additional members of the Interstate Commerce Commission besides a successor to the late Judson C. Clements is causing considerable activity on the part of members of Congress and elsewhere in recommending candidates. A telegram signed by the governors of Massachusetts, New Hampshire, Vermont, Maine, Rhode Island and Connecticut has been sent to the President urging that New England be given representation. Senator Newlands has urged the appointment of J. F. Shaughnessy of the Nevada commission and the name of Max Thelen, president of the California commission and of the National Association of Railway Commissioners, has been mentioned, as has that of Edgar J. Watkins, examiner-attorney for the commission, and it has been rumored that the name of George B. McGinty, secretary of the commission, will also be placed before the President.

House Committee Changes Priority Bill

The House Committee on Interstate and Foreign Commerce has reported out the priority bill, S. 2356, recently passed by the Senate, but with numerous changes. The condition in the principal section of the bill authorizing the President to issue priority orders if he finds it necessary "for the successful prosecution of the war" is changed to read "for the national defense and security," and to the provision authorizing him to issue orders through such person or persons as he may designate is added the words "or through the Interstate Commerce Commission." The committee also struck out the provision requiring the carriers to maintain a commitee at Washington to receive and arrange for compliance with priority orders, the provision authorizing carriers to enter into agreements looking to a division of earnings on certain kinds of traffic, and the amendment added by Senator Reed authorizing the Interstate Commerce Commission to require the railways to provide sufficient cars and equipment to promptly move and transport all traffic tendered to them. The provision in the Senate bill that for the transportation of persons or property in carrying out the orders and directions of the President the lawfully established tariffs shall apply is changed to read that "just and reasonable rates shall be fixed by the Interstate Commerce Commission."

The priority bill and the bill to enlarge and reorganize the Interstate Commerce Commission are expected to be taken up promptly in the House as soon as it completes the debate on the rivers and harbors bill.

JAMES E. GORMAN

James E. Gorman, chief executive officer for the receivers of the Chicago, Rock Island & Pacific, was elected president of the reorganized company at a meeting of the board of directors on June 22. His thorough familiarity with the property the affairs of which he will direct, his success as executive head of the organization during the receivership, his ability and railway experience, and his great personal popularity make his selection as president the logical one.

Although Mr. Gorman has been in railroad work for nearly 40 years he is but 53 years of age, and consequently among the younger railroad executives of the country. His rapid rise to high office, is due not only to great natural ability, but to thoroughness and untiring effort; to his command of detail, his mastery of traffic matters, his fairness in all his dealings and his always kindly, genial and tactful treatment of people. Prior to his appointment as chief executive officer of the Rock Island his railroad experience was almost entirely in the traffic department. It was in that field that he built up a wide reputation among shippers for diplomacy and fair dealing. Shippers knew that "Jim" Gorman's word was equivalent to his bond and, therefore, became his fast and faithful friends. Although naturally disposed to keep out of the limelight, his thorough knowledge of rates and his great familiarity with rate structures was well known to traffic officers and railroad patrons alike.

J. E. Gorman

His perseverance and determination never permit a problem to pass him unsolved. Having risen from the ranks, he fully appreciates the trials and difficulties of his subordinates and is most friendly and democratic in his relations with them. Although a stern disciplinarian when necessary, he is known for his great patience with all with whom he has dealings. Unlike many self-made men who have been hardened by the stern realities of a strenuous life, he retains his fine sensibilities and his keen sympathy for his fellow men. In his quiet way he has assisted many out of difficulty and only those closest to him know the extent of Mr. Gorman's generosity.

Under Mr. Gorman's administration as chief executive officer, which began on November 1, 1915, the Rock Island's financial results were greatly improved. In the year ended December 31, 1916, the net income after operating expenses, taxes, interest, rentals and other deductions, amounted to $8,078,189, as compared with a deficit of $386,389 for the previous year. For the same period the total operating revenue showed an increase of $9,589,770, or about 13.5 per cent, while the operating expenses increased $1,481,259, or about 2.8 per cent. Net operating revenue increased $8,108,510, or about 45.8 per cent, and operating income increased $7,852,133, or 55.5 per cent. An increase of $7,959,008, or 51.5 per cent, was shown in gross income, while interest, rentals and other deductions decreased $505,568, or 3.2 per cent. The fact that this record was made by practically the same organization which operated the road before the receivership bears out the previous contention of the *Railway Age Gazette* that the troubles of the Rock Island were attributable to bad financial management rather than to the incompetency of its officers. Mr. Gorman has been fortunate in receiving the assistance of loyal and able associates, among whom A. C. Ridgway, chief operating officer for the receivers, has been foremost.

As was pointed out in an operating study of the Rock Island published in this paper on May 19, 1916, it reaches more of the large western traffic centers than any other road. Among them are Chicago, St. Paul, Minneapolis, Des Moines, Omaha, St. Louis, Kansas City, Denver, Memphis, Ft. Worth and Dallas. In addition to its main line from Chicago to St. Paul, Denver, Santa Rosa, N. M., and Dallas, Tex., and from St. Louis to Kansas City and Tucumcari, N. M., it has the only east and west main line between St. Louis and New Orleans, namely, the line from Memphis to El Reno, Okla., to Tucumcari, N. M. The greatest handicap to its development and the thing more responsible than any other for the receivership was the provision in the general mortgage of 1902 limiting the issuance of bonds for expenditures for addition and betterment work to $3,500,000 annually. This limitation has had the result that practically all the available funds have been required for small routine improvement work, leaving only occasionally a surplus sufficient to build a small terminal or some other needed facility and leaving no funds for the reduction of grades, the building of second track or large terminals or the provision of other facilities which, although costing large sums, are absolutely essential to economic operation and yield full returns in decreased transportation cost. With the financial incubus which formerly weighed it down removed, it ought, under Mr. Gorman's administration, to do much better than it did prior to the receivership if general conditions in its territory are favorable.

Mr. Gorman was born at Chicago on December 3, 1863, and entered railway service with the Chicago, Burlington & Quincy in August, 1877, as a car number taker. He was later assistant yard clerk, clerk in the claim department, voucher clerk and tariff clerk on the same railroad. From March, 1885, to April, 1887, he was clerk in the general freight office of the Chicago & North Western and from April, 1887, to May, 1889, was chief clerk in the general freight department of the Chicago, Santa Fe & California. From the latter date until March, 1890, he was tariff clerk in the general freight office of the Illinois Central, following which he was clerk and chief clerk on the Chicago, Santa Fe & California. From December, 1893, to March, 1895, he was traffic manager for Joy Morton & Co. Returning to railroad service he was chief clerk to the traffic manager of the Atchison, Topeka & Santa Fe from March to September, 1895, when he was appointed assistant general freight agent

with headquarters at Chicago. From September, 1899, to April, 1904, he was general freight agent, following which he was consecutively assistant freight traffic manager and freight traffic manager. He left the Santa Fe on December 15, 1909, to become first vice-president in charge of traffic of the Rock Island. When the road went into the hands of receivers he was appointed chief traffic officer and on November 1, 1915, was appointed chief executive officer.

INCREASE IN THE WORK OF THE I. C. C.

The accompanying table showing the great increase in the work of the Interstate Commerce Commission during recent years, was recently placed before Congress by Chairman Adamson of the House Committee on Interstate and Foreign Commerce, in connection with the debate on the bill to enlarge and reorganize the commission.

STATISTICS OF WORK OF THE COMMISSION FOR THE FISCAL YEARS ENDING NOV. 30, EXCEPT AS OTHERWISE NOTED.

	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
Formal proceedings:												
Complaints filed	50	74	410	549	1,090	660	881	755	1,023	1,131	962	851
Subcomplaints filed [1]						305	196	218	136	262	216	188
Investigations instituted	15	8	5	5	7	11	12	16	15	11	6	14
Suspensions granted						25	43	120	159	206	194	222
Total	65	82	415	554	1,097	1,001	1,132	1,109	1,333	1,610	1,378	1,275
Requests for suspension denied						16	51	112	191	239	337	295
Formal proceedings disposed of:												
Complaints and investigations	83	63	165	347	788	817	652	778	863	901	1,105	891
Suspension cases							46	54	151	169	200	191
Total	83	63	165	347	788	817	698	832	1,014	1,070	1,305	1,082
Number of reports issued	46	32	111	223	403	493	491	622	806	898	964	781
Number of pages [2]	763	251	503	1,331	1,700	1,750	1,869	2,812	3,230	3,746	4,290	3,756
Fourth section:												
Applications filed							5,723	1,757	1,252	950	673	516
Orders granting permanent relief								241	199	265	260	741
Orders granting temporary relief								1,346	1,057	821	502	364
Applications withdrawn									114	38	41	48
Hearings and testimony:												
Number of hearings	79	73	276	573	601	737	943	1,154	1,401	1,589	1,543	1,672
Pages of testimony:												
Formal cases	10,500	28,000	35,000	67,000	61,000	64,000	80,000	108,000	108,200	115,700	123,000	148,714
Suspension cases							19,100	20,350	22,200	35,000	73,700	40,682
Fourth-section cases							2,000	6,550	1,600	5,400	5,700	5,839
Total pages of testimony	10,500	28,000	35,000	67,000	61,000	64,000	101,100	134,900	132,000	186,100	202,400	195,235
Special dockets:												
Applications filed			761	3,789	4,406	5,102	5,653	6,009	6,730	6,014	6,670	6,001
Applications granted			561	1,012	2,379	3,508	3,875	3,096	4,610	6,010	4,854	4,787
Applications denied			200	864	1,199	1,463	739	799	1,818	2,213	2,537	1,764
Informal complaints filed	503	1,002	4,382	4,640	4,435	3,840	4,325	6,550	7,600	8,154	6,385	4,898
Letters received	12,146	19,900	49,348	79,553	105,271	111,849	117,403	136,420	146,078	158,810	148,239	155,276
Tariff division:												
Tariffs filed	165,736	223,243	210,982	228,403	184,303	154,905	121,827	108,766	141,257	157,294	149,478	107,027
Concurrences filed	113,003	111,334	124,195	78,017	98,173	95,026	77,988	53,701	49,352	65,011	68,693	58,952
Contracts filed	4	707	307	598	562	229	267	864	518	584	443	546
Orders on applications to establish rates on less than statutory notice		749	3,286	4,053	4,047	3,893	3,692	3,715	3,263	4,022	4,812	4,312
Rate memorandums	1,242	2,547	3,401	3,956	5,911	5,264	5,515	4,152	4,468	5,468	5,303	9,730
Division of safety: [3]												
Freight cars inspected	252,361	271,617	242,881	257,808	357,623	436,590	487,131	451,090	738,665	790,822	1,000,210	908,566
Passenger cars inspected	6,653	11,698	9,116	7,051	12,377	15,480	16,137	17,120	30,266	26,746	33,427	27,220
Locomotives inspected	11,880	16,308	12,733	10,873	18,976	22,604	24,999	22,182	31,753	32,761	38,784	31,721
Accidents investigated								64	76	63	66	85
Cases prepared for prosecution	51	65	148	275	100	210	248	398	500	493	267	426
Penalties collected	$5,300	$11,100	$20,700	$38,200	$44,300	$52,700	$44,326	$68,235	$158,861	$173,190	$148,537	$99,570
Division of Locomotive Boiler Inspection:												
Locomotives inspected [3]								74,234	90,346	92,716	73,443	52,680
Division of Statistics: [3]												
Annual reports filed—												
Steam railway companies	1,295	1,377	1,407	1,452	1,528	1,527	1,618	1,561	1,509	1,623	1,615	1,681
Electric railway companies				120	155	167	271	381	412	406	410	416
Express companies				28	22	17	17	16	14	12	10	10
Sleeping car companies						1	1	1	1	1	1	1
Water carriers										38	126	201
Telephone companies										400	822	901
Total	1,295	1,377	1,407	1,600	1,705	1,712	1,907	1,959	2,026	2,138	2,984	3,210
Division of Inquiry:												
Number of indictments returned				46	35	44	62	93	61	58	72	54
Penalties collected				$211,775	$308,233	$63,500	$214,225	$344,420	$145,400	$204,506	$277,435	$339,290
Investigations conducted [4]											360	273
Memorandums to commission [4]											200	227
Division of Carriers' Accounts:												
General examinations—												
Roads visited					3	26	7	18	10	3	13	163
Reports					3	23	7	13	10	3	8	170
Special examinations—												
Roads visited					117	73	64	89	130	45	175	63
Reports					53	44	32	42	71	33	123	75
Examinations in connection with formal cases:												
Roads visited					1	1		29	13	32	39	82
Reports					1	1		6	9	13	15	119
Examinations in connection with congressional resolutions:												
Roads visited								2	44	5	34	3
Reports								2	4	4	3	1
Total visits					121	100	71	138	157	85	261	311
Total reports					57	68	39	63	94	53	149	365

[1] Prior to 1910 each complaint was given a separate number. Beginning with that year all complaints involving substantially the same subject-matter were consolidated under one number.
[2] A bound volume consists of about 700 pages. Eleven volumes contain all reports of the commission prior to August, 1906. Since that time 30 volumes of reported opinions and 4,372 pages of unreported opinions have been published.
[3] For the fiscal year ending June 30.
[4] Records not previously kept so as to differentiate this information by years.

Centralizing the Handling of Timber on the B. & O.

The Inspection, Storing, Treatment and Distribution of Ties and Lumber Concentrated in One Department

By F. J. Angier

Superintendent of Timber Preservation, Baltimore & Ohio System.

THE rapidly increasing item of tie expense led the operating officers of the Baltimore & Ohio to undertake a complete study of the tie situation in 1914. This has resulted in concentrating the inspection, treatment and distribution of all ties in the timber preservation department. This department has also been assigned in a general way to the investigation of all phases of the tie and lumber business on the railroad, with the idea of securing the greatest possible economy in the use of wood through the selection of the best species, sizes, etc., to be employed in each instance. This arrangement was made in the belief that if the entire responsibility for this heavy expenditure was concentrated in one department better results would be attained than by leaving it as one of several duties of the different departments interested in the use of timber.

The Inspection and Use of Ties

The work of the timber preservation department was originally limited to the operation of the timber-treating plant at Green Spring, W. Va., where approximately 1,000,000 ties per year, and other timbers, are treated; and to the inspection of ties and timber treated by contract at other points. The treating plant at Green Spring, W. Va., consists of two treating cylinders each 7 ft. in diameter and 132 ft. long. A charge consists of about 600 ties, and these can be thoroughly treated in about 6 hours. The plant was built four years ago and was described in the *Railway Age Gazette* of June 20, 1913.

In 1915 the duty of inspecting all ties before purchase was delegated to this department, the purchasing agent first negotiating with producers who notify the superintendent of timber preservation when ties are ready for inspection. Each inspector is assigned to a certain district to relieve him of the necessity of making long trips and to enable him to become familiar with the situation in his particular territory. It has been the aim of this department to secure ties which come up to the specifications, and to make inspections promptly after the ties are produced along the right of way. When ties are produced on foreign lines the inspection is made when they are loaded.

If the specifications of the Baltimore & Ohio are followed exactly they will secure excellent ties. To keep the work of the inspectors at a uniform standard, it has been found desirable to have them meet occasionally at the Green Spring treating plant, and go over a large number of ties, such as are stored there for seasoning, to see that each man has a clear idea of the ties which should or should not be accepted.

The tie schedule formerly in use has been elaborated considerably to specify the ties which should be used on different divisions. In many cases the divisions have been further divided into districts varying with the topography, density of traffic, preponderance of grade and curvature, etc. A complete schedule has been prepared for the entire system, and the most economic tie for every condition of track and traffic determined upon. This schedule shows the first, second and third choice of ties for every district, as it is recognized that, for various reasons, the most economical tie cannot always be furnished. One feature entering into consideration is the question of the haul of treated or untreated ties. For example, the hauling of treated ties out to the ends of outlying branches and the bringing in to the main line of white oak ties from the ends of these same branches is naturally to be avoided. On some of the heavy mountain grades the use of treated ties has not been recommended.

To decide upon the most economical tie, the first cost, installation and handling costs were used to arrive at the total cost in track. The cost per tie per year was then computed by dividing by the assumed life and adding the interest at 6 per cent. In order to determine what the assumed life was to be in each case the records of the Baltimore & Ohio were used, and also data published by the American Wood Preservers' Association and the American Railway Engineering Association, as well as the opinions of many experienced maintenance of way officers. The effect of curvature on the use of tie-plates was also studied and considered in the preparation of the schedule, as a result of which it was found that in some locations where traffic density was heavy and where hardwood ties were used the use of tie-plates was not economical.

Another innovation was in the handling of switch-ties. The custom on this road for some years had been to spot in single switch-ties the same as cross-ties. To prevent the long storage of small supplies of switch-ties at many different points, with their resulting deterioration, an arrangement was made for the storekeepers to order their supplies of switch-ties in accordance with the inspection or spotting made by the division forces who later made out an order for the exact number and lengths required. The division storekeeper then carries at the storehouse only the stock required for his division, and few additional extra sizes for emergencies, or new work. This has prevented carrying odd lengths year after year and ordering more than are used.

The timber preservation department has also been given the duty of inspecting ties removed from the track with the idea that if one essential to tie economy is to furnish good ties the second is to leave them in track as long as they will continue to perform their function satisfactorily. The importance of securing the complete life from each tie made it appear worth while to provide an independent check on the ties removed from track to ascertain whether they might not have further value; therefore this department has a small force of inspectors who travel over the road and examine ties removed before they are burned. The ties are piled after removal, but they are not burned until the inspector has gone over the territory and marked those which should be preserved. The maintenance of way department then takes charge of the ties which are saved and uses them as it sees fit. The supervisors either have the foreman put these ties back in track or use them for temporary sidings, back-tracks in yards, etc. This system is satisfactory in practice, as it deters foremen from removing ties which are still good. The inspectors do not find many good ties being removed, this inspection being similar in effect to insurance—a protection against possible loss.

Making the Best Use of Lumber

Another new duty of this department is to inspect lumber before purchase, study the methods of piling and storing, and investigate its use for both maintenance of equipment and maintenance of way purposes in order to see that

the most economical kinds, grades, lengths and thicknesses are ordered and used. One of the first steps in this work was to give inspectors the particular training necessary regarding the grades to make certain that the lumber received is in accordance with what was ordered and what the dealers bill the company for. The inspection of lumber is a highly specialized work, and there is such a large difference between the prices of the different grades that unless a great deal of care is given to the inspection of lumber when received, a railroad may easily lose many dollars on each car. A shortage of as little as 250 ft., board measure, of lumber at $40 a thousand will result in an overcharge of $10, and even a greater loss may readily be incurred by accepting as No. 1 what might be No. 2 common or even a lower grade, especially in the car stock, much of which is expensive material. The checking up of the use of proper kinds, grades, sizes, etc., is in the hands of a supervisor of maintenance of way and equipment lumber, and a man with wide experience in car building was selected for this position.

The investigation of many cases where treated wood may be used profitably is being carried on continuously. Some of these cases are the preservative treatment of white oak ties, switch-ties, piling, tie-plugs, etc.; wood block paving for shops, team yards, warehouses and docks, and the preservation of lumber for icehouses, road crossings, platforms, etc.

The latest addition to the duties of this department is the distribution of cross-ties and switch-ties. There are three separate organizations of the Baltimore & Ohio which require ties—the New York terminal lines, the Eastern lines, and the Western lines. This department also handles such work for the Baltimore & Ohio Chicago Terminal railway and the Cincinnati, Hamilton & Dayton railways.

Owing to the belief of the management that the distribution of the supply for these separate organizations can be handled better by one central body than to have each organization negotiate for its own ties, an arrangement was made late last year to place the distribution of ties in the hands of the timber preservation department. After the allotments are agreed upon, the engineers maintenance of way of each of the above organizations order a certain number of ties for each division from the timber preservation department, and as the ties are produced, inspected and treated (where required), this department distributes them.

The distribution described above works in with the inspection before purchase already described, because the timber preservation department knows the production situation in every district and on foreign lines, and can push inspection in places necessary, or ship in from foreign territory where the conditions of haul, etc., make it most economical. This arrangement should eliminate, or at least minimize, expensive cross-hauls.

INCREASED USE OF OIL FUEL.—A decided increase in the use of petroleum as locomotive fuel by the railroads of the United States in 1916 is shown by statistics compiled under the supervision of John D. Northrop, and just published by the United States Geological Survey, Department of the Interior. Reports submitted by 53 railroad companies, comprising all that operate oil-burning locomotives in the United States, show that the quantity of oil fuel so consumed last year was 42,126,417 barrels, a gain of 5,477,951 barrels, or 15 per cent over the consumption in 1915. This increase shows the steady expansion in the United States of the market for low-grade petroleum from Mexico rather than any appreciable increase in the use as fuel of low-gravity crude oils from domestic sources. The total distance covered by oil-burning engines in 1916 was 140,434,566 miles, and the average distance covered per barrel of fuel consumed was 3.33 miles. Oil-burning locomotives were operated in 1916 over 31,980 miles of track in 21 states.

RUSSIA WANTS 2,000 LOCOMOTIVES FROM US

"Locomotives, locomotives and still more locomotives" are the fundamental needs of Russia today, Professor Lomonosoff, railroad minister with the Russian mission, told Washington newspaper men in an interview on the railroad situation in that country. "Quite frankly I can say to you, our American friends," he said, "give us locomotives and we shall give you military success." One of the principal objects of the Russian mission in this country is to arrange for supplies of locomotives, cars and other railway material in addition to those which have already been purchased, and an American railroad commission is now in Russia making an investigation as to the needs of the Russian railways. According to Prof. Lomonosoff, Russia needs at once 1,000 Decapod locomotives to put the present idle cars in operation, another 1,000 to free the congested freight terminals, and 850 annually to meet the deficiency between Russia's manufacture and the needs for renewal and new construction.

After saying that the Siberian Railroad was in splendid condition for the immense task put upon it, that coal was available, and that adequate sidings had been completed, he continued:

"Present conditions on railroads in Russia are nothing but an inheritance from our short-sighted old government. Two-thirds of all our railroads are owned by the state, and to justify itself from the true reproaches of the Duma that our railways are uneconomically managed, the old government decided to raise their revenues.

"Beginning with 1908 there was almost complete stoppage of freight locomotive orders, so that the money assigned for these orders remained in the treasury and the revenues given in the railway reports increased. The private railways had to follow this policy as their shareholders did not wish to get less revenue than the government.

"Such a policy provoked a breakdown of the locomotive works. In 1906 1,280 locomotives were built in Russia, but in 1910 only 195 were ordered, and our works, which are in private possession, were obliged to turn to other manufacture. In 1913 the old government realized its fault and increased the locomotive orders, but it was too late.

"When the war broke out our railway authorities hoped that after the mobilization had been completed the railway traffic would diminish. But in reality the contrary happened. Although we lost about 4,000 miles of railways occupied by the Germans the traffic on our railways increased by 10,700,000,000 ton miles, or by 20 per cent. This is due to the increase of the transport distances.

"For instance, there were only 10 or 15 cars daily running between Vladivostok and the centre of Russia; now, due to the fraternal help of the United States, we are sending from Vladivostok several hundred loaded cars every day which must make a 6,111-mile run.

"Another example is the transport of coal. In peace times the Petrograd and Riga districts used English coal brought on ships; now we have to transport these enormous quantities of coal by rail from the south of Russia, a distance of 1,000 miles. All these reasons brought on a locomotive shortage. Although in the summer of 1916 we got 400 excellent American locomotives, this shortage reached its critical stage last winter."

AMERICAN RAILWAY COMMISSION IN RUSSIA

Press despatches from Petrograd report that the American Railway Commission which is now in Petrograd proposes to make a wider examination of Russia's railroad resources than first contemplated, and a trip through the south is being considered. The commission is confident that great improvements are practicable even with the deficiency in rolling stock. The immediate problem is congestion, and the commission believes that even under present conditions traffic can be increased more than threefold.

In a statement given to the Associated Press, M. Mitinsky, director of the Department of Materials, expressed warm appreciation of the work already accomplished by the Americans. M. Mitinsky, who met the commission at Vladivostok, said:

"Mr. Stevens and his colleagues found the track not so bad as expected, it being of similar construction throughout, without any particularly bad spots. In regard to the rolling stock, they also found the condition of the cars relatively favorable.

"The work of the Americans in Vladivostok was admirable and they are planning and putting together shops. On the spot they decided that the facilities at Vladivostok were inadequate to care for the expected delivery of big American orders and construction of two big piers was decided upon and sketches made. The work has begun and will be finished within three months.

"At Harbin, Tobita, Krasnoyarsk, Irkutsk and also at Vyatka, in European Russia, thorough examinations were made to find suitable locations for repair shops. We will act on the advice of the commissioners.

"Although no programme is fixed, I believe the Americans will stay as long as we want them. In my opinion that means a very long time."

UNUSUAL RECORDS OF LIFE OF CAST IRON PIPE

Some service records on cast iron pipe used in railway water supply lines were recently developed which will be of value to those concerned with water service installation. These data should also afford an opportunity for interesting comparisons with the basis used by the Federal valuation forces in estimating the depreciation on this material. The long life of cast iron pipe is a matter of rather general knowledge. There are records of pipe in use in Europe for over 200 years. In this country, and particularly on railroads, such long time service records are not to be had because of the limited time that these pipes have been in use. In the early years of American railroads, water service requirements were usually fulfilled with pipes of less than three-inch diameter and the use of cast iron pipe in consequence was limited to locations where three-inch or larger pipe were used. The records which follow are secured from the few examples of cast iron pipe lines over 50 years old available for investigation.

Several instances of old installations of cast iron pipe were recently made the subject of some study on the Illinois Central with the result that the life of several of these lines has been accurately traced down to the present time. The most interesting of these is a pipe line laid at Centralia, Ill., in 1855. This was a line of 4-in. cast iron pipe approximately 10,000 ft. long. After 12 years of service in 1867, the pipe line became inadequate for the water consumption and upon examination it was found to be heavily encrusted. Efforts were made to improve its capacity by cleaning it and relaying a part of it with clean out boxes at intervals of 100 ft. This provided only a temporary relief and the following year about 5,000 ft. of the line was taken up and relaid with 8-in. pipe, which is still in service after being in the ground 49 years. The 4-in. pipe relieved at Centralia was relaid in 1868 or 1869 at Ramsey, Ill., where it remained in service until 1903, when it again became too small for the demand and was replaced by 6-in. pipe. Since that time the old 4-in. pipe has been used at various places, principally as drains. A part of it is now in storage at Burnside, Ill.

This pipe has a bell that differs in several details from the standard designs of the present time. Another interesting detail is the presence of two reinforcing rings or enlargements in the thickness of the pipe at the third point of the length. A characteristic of early cast iron pipe was an inequality in thickness, resulting from the practice of casting the pipe with the mold in a horizontal position. Measurements taken indicated an average thickness of about ⅜ in. As a means of getting some idea of the loss of section occurring during the 62 years of service, the dimensions of this pipe were compared with records of early designs of cast iron pipe and the conclusion was reached that it originally conformed to a design recorded in an early issue of the Journal of the Franklin Institute, having a length of 9 ft., diameter of 4 in., thickness of shell of 7/16 in., and depth of hub of 4 in.

Another installation of which authentic records are available is one of 7,500 ft. of 4-in. cast iron pipe at Little Wabash river, laid in 1857. This remained in service until July, 1893, when it was replaced by larger pipe. The old pipe was stored at Centralia until 1894 or 1895, when portions of it were relaid at that place and at Effingham and at Big Muddy. The installations at the last named places have since been removed, but the pipe at Centralia is still in service. No signs of paint can be found on the pipe at the present time, and apparently it never had been painted.

Some 6-in. cast iron pipe laid at Centralia in 1868 and 1869 was taken up when the shops were abandoned in 1916. The pipe was found to be in such a good state of preservation after 40 years of service that most of it was reused, no distinction being made between the old pipe and new cast iron pipe. Other examples of long life for lines of cast iron pipe on the Illinois Central include a 4-in. pipe line, 1,740 ft. long, at Cherokee, Iowa, laid in 1870 and continued in service until 1900, when it was abandoned on account of a change in the location of water facilities; a line of 3-in. cast iron pipe 1,175 ft. long laid at Correctionville, Iowa, in 1887, and still in use; a line of 3-inch pipe 606 ft. long laid at Gaza, Iowa, in 1888 and abandoned in 1911 on account of the destruction of the water plant by fire; and a line of 4-in. cast iron pipe 2,962 ft. long laid at Webster City, Iowa, in 1869. A part of this pipe line is still in use.

Atttention can well be called to the tendency of cast iron pipe, in common with all types of pipe, to become more or less encrusted with lapse of time. This, however, has no bearing on the long life of cast iron pipe, since the pipes can be cleaned from time to time. For example, the Illinois Central experienced difficulty of this kind in 1913 with an 8-in. cast iron pipe line supplying water from the Big Muddy river at Carbondale, Ill. This pipe had been so encrusted that a pressure of 140 lb. per sq. in. was necessary at the pump to deliver 400 gal. per minute, which indicated that the pipe was reduced to approximately the capacity of a 5-in. pipe. Upon examination it was found that the diameter was reduced to about 7 inches, indicating a large increase in the friction factor as a result of the increased roughness. After studying the situation a contract was let for cleaning the pipe under a guarantee to restore it to 95 per cent of the discharge capacity of new pipe. The encrustations removed from the pipe were estimated to represent about 16 tons of material and the work was done without taking the station out of service for more than a few hours at a time and with no interruption to train service. After the cleaning was complete a test run on the pump gave a discharge of 498 gal. per min. for an average pressure of 70 lb. sq. in., the contractor having fully met with his guarantee to restore the pipe.

From the information presented it is clear that cast iron pipe has not been in use long enough to demonstrate its actual service life. The data on loss of thickness are too limited to permit of any definite conclusions, although indicating that the ultimate life must be many times the total number of years represented in any of the records given.

ANNUAL GOVERNMENT SIGNAL BULLETIN

The length of railroad in the United States, January 1, 1917, on which the block system was in use, was 97,927 miles, as compared with 96,281 miles on January 1, 1916. These are the totals, after deducting duplications, as shown in the annual bulletin which has just been issued by the Interstate Commerce Commission. These duplications, consisting of sections of road used jointly by two companies, aggregate no less than 481 miles, in 16 pieces. This total is made up of 97 miles, single track, automatic; 301 miles, double track, automatic; 48 miles, single track, non-automatic, and 35 miles, double track, non-automatic. The figures for five years are shown below:

MILES OF RAILROAD ON WHICH THE BLOCK SYSTEM IS IN USE

	Jan. 1, 1917	Jan. 1, 1916	Jan. 1, 1915	Jan. 1, 1914	Jan. 1, 1913
Automatic	32,557	30,714	29,600	26,570	22,219
Manual	65,370	65,567	66,679	60,167	61,731
Total	97,927	96,281	96,279	86,737	83,950

Sixty-five roads report the block system in use throughout the whole length of all their lines which are used in passenger service.

The principal increases and decreases shown in the bulletin, as compared with January 1, 1916, are as follows:

Names of railroads.	Increase.		Decrease, nonautomatic.
	Automatic.	Nonautomatic.	
Atlantic Coast Line	74.6		71.5
Baltimore & Ohio	74.6		77.0
Canadian Pacific			186.6
Chesapeake & Ohio			39.5
Chicago & North Western	62.5		61.2
Chicago, Burlington & Quincy	182.7		234.5
Chicago Great Western	106.1		
Chicago, Indianapolis & Louisville	44.7		
Chicago, Lake Shore & South Bend [1]	56.0		
Cincinnati, Indianapolis & Western [1]	99.0	282.0	
El Paso & Southwestern System	25.3		
Erie	83.4		41.3
Hudson Valley [1]	23.7		
Illinois Central	244.2		
Long Island		129.2	
Los Angeles & Salt Lake	56.3		
Louisville & Nashville	175.2		
Minneapolis, St. Paul & Sault Ste. Marie		140.5	
New York, New Haven & Hartford		48.2	
Norfolk & Western	80.2		43.2
Oahu Railway & Land Co. [1]	22.2		
Portland [1]	23.4		
St. Louis, Iron Mountain & Southern	38.4		38.8
Southern	67.8		65.9
Southern Pacific (Pacific System)		354.2	
Galveston, Harrisburg & San Antonio		53.5	
Houston & Texas Central			27.0
Texas & Pacific		316.6	
Union Pacific	54.0		
Wabash	38.9		40.1
Western Maryland	102.0		
Total	1,735.2	1,324.2	926.6

[1]Roads which have not heretofore reported block signal mileage.

Table 1, the principal table in the bulletin, contains data from a considerable number of electric roads, the signaling of which includes a large mileage, which, under the standards which prevail on steam railroads would not be classed as block signaled.

The increase shown against the Cincinnati, Indianapolis & Western, is in part merely a correction of an error in the table shown one year ago, this road having been omitted from that table; the actual increase on this road during 1916 having been 98 miles, non-automatic. One increase not shown is that of the Ottawa & New York, which in the statistics is credited with 69 miles, non-automatic, single track. The Chicago, Rock Island & Gulf appears in the table for the first time; 33 miles, automatic, single track.

The Central Vermont, not shown at all this year, was recorded last year as having 402 miles, manual; all single track except six miles. The Wheeling & Lake Erie, showing 13 miles, non-automatic, single track, last year, is absent from the record this year. Another absentee is the Duluth & Northeastern, 60 miles. This is an industrial road at Cloquet, Minn.

The Chicago, Milwaukee & St. Paul now has 121 miles of road (single track), equipped with light signals.

The length of railroad on which telephones are used in transmitting train orders now aggregates 103,393 miles, an increase of 4,144 miles over the length of road thus reported one year before.

STEEL AND STEEL UNDERFRAME PASSENGER TRAIN EQUIPMENT

The rapidity with which the railroads of the United States are retiring wooden passenger cars and replacing them with cars of all-steel or steel underframe construction is shown by statistics gathered by the Special Committee on Relations of Railway Operation to Legislation. Bulletin No. 93, which has recently been issued, shows that on January 1, 1909, there were in service only 629 all-steel cars and 673 with steel underframes, while on January 1, 1917, the number of all-steel cars was 15,757, an increase of 2,405 per cent for the eight-year-period, and the number of cars with steel underframes increased during the same time to 6,386, or 812 per cent.

The statistics show that the construction of wooden passenger cars has practically ceased and the wooden cars still in service are being rapidly retired. The number of wooden cars in service January 1, 1912, was 48,126, but on January 1, 1917, the number was only 39,169. During the calendar year 1916 alone 2,213 wooden passenger cars were removed from service. The replacement of wooden equipment with steel can not be regarded as a profitable undertaking, but only as a measure of safety. The first cost of steel cars is higher and the available data, though meager, indicates that the cost of maintenance is considerably greater than for wooden cars. When steel cars were first introduced they undoubtedly had some effect in securing competitive traffic, but the use of steel equipment has now become so general that the advantage has disappeared. In its last annual report the Interstate Commerce Commission recommended "that the use of steel cars in passenger train service be required and that the use in passenger trains of wooden cars between or in front of steel cars be prohibited." In view of the fact that of the 1,445 passenger train cars built during the year 1916 only three, or 0.2 of 1 per cent of the total number, were of wood, any legislation of that sort seems quite unnecessary. It is interesting to note that only 7.3 per cent of the cars built in 1916 were of steel underframe construction, as compared with 92.5 per cent all-steel.

The number of cars of steel, steel underframe and wood acquired by the roads during the years 1909 to 1916 inclusive, is as follows:

Acquired in—	Total number	Percentages		
		Steel	Steel underframe	Wood
1909	1,880	26.0 per cent	22.6 per cent	51.4 per cent
1910	3,638	55.4 per cent	14.8 per cent	29.8 per cent
1911	3,756	59.0 per cent	20.3 per cent	20.7 per cent
1912	2,660	68.7 per cent	20.9* per cent	10.4 per cent
1913	3,350	63.0 per cent	30.4* per cent	6.6 per cent
1914	4,495	74.6 per cent	29.9* per cent	4.5 per cent
1915	1,696	73.7 per cent	20.1* per cent	6.2 per cent
1916	1,445	92.5 per cent	7.3* per cent	0.2 per cent
January 1, 1917 (under construction)	1,759	82.5 per cent	16.9 per cent	0.6 per cent

*This figure includes wooden cars reconstructed with steel underframes.

According to an act of Congress which was signed August 24, 1912, the railroads will not be allowed to use any full postal cars which are not of steel or steel underframe construction after July 1, 1917. The introduction of steel postal cars began before the passage of this act, however, as is shown by the following table:

Postal cars acquired in	Steel	Steel Underframe	Wood
1909	52	30	5
1910	140	10	11
1911	286	88	11
1912	30	10	0
1913	101	18	0
1914	204	1	6
1915	19	3	0
1916	29	0	0

It is estimated that the steel passenger train equipment now in use on the railroads of this country has cost the roads $325,000,000. That the expense of the change from wood to steel has been borne by the railroads is proven by the fact that between 1909 and 1915 (the last year for which figures are available) the revenue per passenger per mile increased only 0.057 cents or from 1.927 cents to 1.985 cents per mile. There are now in service approximately 36,169 wooden passenger train cars. The committee estimates the cost of replacing these cars with steel equipment as follows:

APPROXIMATE COST OF REPLACEMENT OF WOODEN CARS

	Average Number	Cost	Amount
Postal	237	$19,000	$4,503,000
Mail and baggage	2,251	17,500	39,392,500
Mail, baggage and passenger	547	17,500	9,572,500
Baggage and passenger	3,129	17,500	54,757,500
Baggage or express	6,608	14,800	97,798,840
Passenger	20,906	23,000	480,838,000
Parlor, sleeping, dining	4,432	37,000	163,984,000
Business	736	26,000	19,136,000
Motor	323	35,000	11,305,000
Total	39,169		$881,287,340

The railroads will undoubtedly retire these wooden cars as rapidly as their earnings will permit. Assuming a value of $4,000 for each car repaired under the classification of accounts of the Interstate Commerce Commission, replacing this equipment will necessitate a charge to operating expenses of $156,676,000. At an annual rate of interest of five per cent, the annual charge on the investment required for this new equipment will be $44,064,367.

TYPE OF PASSENGER TRAIN EQUIPMENT IN SERVICE

Sections—	Number of roads	In service December 31, 1916			Under construction or contracted for but not yet received on December 31, 1916		
		Steel	Steel underframe	Wood	Steel	Steel underframe	Wood
New England	13	643	344	4,056	49	3	...
East	87	6,223	1,881	12,846	886	64	2
Southeast	63	548	603	4,212	235	2	3
Northwest	29	734	212	3,640	16	...	...
Southwest	49	678	452	2,876	40	...	...
West	52	3,652	1,491	8,922	103	42	5
Sleeping Car Co.'s	1	3,276	1,403	2,617	122	187	...
		15,754	6,386	39,169	1,451	298	10
Total United States	294		61,309			1,759	
		108	385	4,780	51	...	...
Canada	8		5,273			51	
		15,862	6,771	43,949	1,502	298	10
Total U. S. and Canada	302		66,582			1,810	
Classes of Equipment:							
Postal		909	194	237	51	1	...
Mail and Baggage		851	454	2,251	117	4	2
Mail, Baggage and Passenger		46	57	547	5	2	1
Baggage and Passenger		691	204	3,129	103	...	...
Baggage or Express		2,029	1,485	6,608	324	60	1
Passenger		6,047	1,906	20,906	658	42	6
Parlor, Sleeping and Dining		4,095	1,829	4,432	182	188	...
Business		42	152	736	10	1	...
Motor		1,044	105	323	1	...	...
		15,754	6,386	39,169	1,451	298	10
Total United States			61,309			1,759	
Mileage:							
United States				235,406			
Canada				31,299			
Total				266,705			

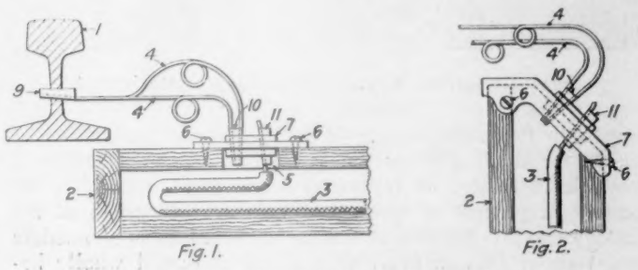
NEW ZEALAND CURTAILS TRAIN SERVICE.—The New Zealand Government has decided, in the interest of economy, to materially decrease the passenger train service on the government railways to begin with May 1, 1917, when only one through express train each day will be run on the main track lines in the North and South Islands. All excursion and special trains will also be taken off all lines and no excursion tickets will be sold. It is thought that by this economy the railway force will be able to handle all the freight offered, notwithstanding the force of trained men has been materially decreased because of the large number who have gone to the front.

THE COLEMAN BOND-WIRE CONNECTOR

W. W. Coleman of the Coleman Railway Supply Co., New York, has developed a bond wire connector in which a metallic plug—the ordinary channel pin—takes the place of the spliced and soldered joint usually employed. On the cap of the trunking there is a metal connection block (7) Fig. 1, secured to the trunking by screws; and a duplex channel pin (10) makes the two bond wires fast. A single channel pin (11) binds the track lead (3). The channel pins insure good electrical connections and with the block (7) perfectly close the hole (5). This arrangement can be inspected by merely walking past it.

This connector is also made to fit the vertically extended trunking shown in Fig. 2. A combined trunking cap and connection block is also made to fit the round form of trunking or conduit. The connector is made of heavy malleable iron and is sherardized after the channel pin holes are drilled. thus insuring a clean contact. The connector will be drilled for any combination of single or duplex channel pins as specified by the purchaser.

Several thousand tests were recently made on track circuits on many railroads and it was found that the resistance between the rails and the battery leads, and between the rails and the relay leads varied from zero to 0.6 ohm. The possibilities of a varying resistance are many; an increase in resistance may cause a signal failure.



Coleman Bond-Wire Connector

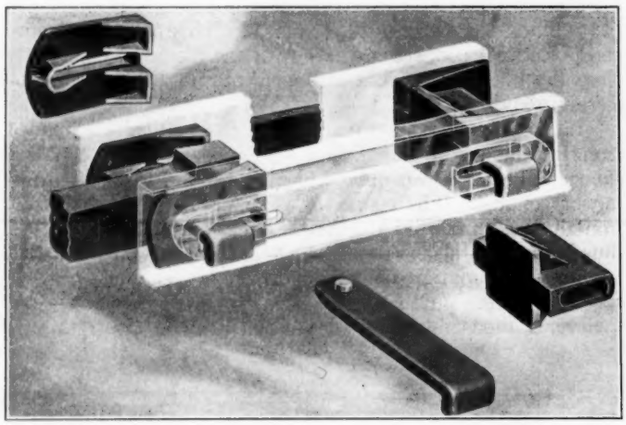
With this connection one man can install 6 bootlegs in the time it takes to solder one joint the old way; and unskilled men can make a good joint in the worst weather. The job requires no tools other than a hammer and a screw driver. The workman has to clean only 1 inch of the insulated track lead. These bond wire connectors are made by the Coleman Railway Supply Co., 30 Church Street, New York.

MURRAY KEY ATTACHMENT

A new design of draft gear key attachment has been placed on the market by the Keyoke Railway Equipment Company, Chicago, Ill. The device consists of two slotted links outside the draft sills at each end of which are placed draft keys of the usual standard dimensions. The front draft key passes through the coupler and draft lugs while the rear key passes through a key housing which fits in a recess in the rear integral draft lug casting. The slots in the front draft lug castings are of such a length that when the limit of capacity of the draft gear is reached the front key takes a bearing on the lug. This relieves the side links and draft keys of all stresses in excess of the cushioning capacity of the gear. It is intended that a coupler with extensions at the rear of the key slot be used with this device, thus changing the stresses on the front key from bending to compression when the key comes in contact with the front draft lugs. The rear draft key has a bearing in the key housing for the full distance between the draft sills, which reduces the force tending to bend the key. Sufficient clearance is allowed in the slots in the draft lugs and links so that when the draft gear is closed under compression there are no stresses on any of these members. The draft keys and side links

are made of rolled steel, while the front and back draft lugs and key housing are of cast steel.

The following advantages are claimed for this type of construction: It eliminates the bending of draft keys. It permits of using all the space between the draft sills for draft gear. It provides for tying the draft sills together at the rear of the draft gear where buffing shocks are transmitted to the underframe. It facilitates the application of either the draft gear or the key attachment and makes it possible to remove or replace either without disturbing the other. It permits of quick removal or replacement of the coupler. This attachment can be designed to accommodate any type of friction draft gear which is placed wholly between the sills.



New Design of Keyoke Draft Gear Attachment

BLUE SIGNAL SAFETY DEVICE

The importance of the blue flag, which is used to protect the workmen while repairing cars, should never be underestimated. Any disregard of this signal is liable to cause injury and sometimes death to the men who find it necessary to go under the cars to make the necessary repairs. The arrangement ordinarily used for protecting such cars consists of a blue flag which is more or less carefully stuck into a tie or into the ground. Often this signal is either knocked down by the wind or by some careless employee, thus offering no protection to the string of cars on which the work is being done. In winter it is difficult to place it in position so that it will remain fixed. Sometimes switchmen will take a chance, remove the flag and place a car on the repair track. This is contrary to the rules and should never be allowed.

In order to provide a signal which will give ample and positive protection, the Acar Manufacturing Company, 30 Church Street, New York, has recently placed on the market a signal standard which cannot be removed except by the proper authorized person. As shown in the illustration, this blug flag standard is clamped and locked to the rail and can only be removed by the man who carries the key for the lock and when once put in position, it will remain in place. The clamp which fits over the rail is made to fit the shape of the rail and can be applied to rail sections weighing from 56 to 100 lb. The arms of the clamp are riveted together and telescoped in the body of the standard which is a piece of pipe. The upper part of these arms extend out through a slot in the pipe and the arms are of such shape that as the standard is raised they will open the clamp. As the standard is lowered the clamp grips the rail and holds the standard in an upright position. The eye in the upper end of the arm which extends out through the slot in the pipe will then line up with an eye in the lug on the pipe body so that the standard may be locked in position.

Any kind of a target may be used in the standard. The one shown in the illustration is painted blue with the words "Car Inspector" lettered on it. A hook is provided for a lantern when the standard is used at night. This device is made of substantial material and can be used for a variety of other purposes, such as marking train tracks in passenger stations, protecting team tracks and in any other places where cars are spotted and are not to be disturbed.

Blue Signal Safety Device Set in Position

Blue Signal Safety Device Being Applied

General News Department

The Louisville & Nashville has increased the pay of large numbers of clerical and other employees, including telegraphers and bridge carpenters.

The Chicago, Milwaukee & St. Paul has granted to its machinists, about 2,000 of them, an increase in pay of 8½ cents an hour, to date from May 1.

The legislature of Pennsylvania, after many weeks of discussion and postponement, has passed the bill suspending the full crew law for the period of the war.

The Baltimore & Ohio reports that 269 employees of the road have applied for enlistment in the various branches of the army and navy, and of this number 178 have been accepted.

The Chesapeake & Ohio has made an advance of 5 per cent in the pay of employees in offices, stations, dining cars and parlor cars, whose wages have not previously been increased this year.

Both houses of Congress have now passed the bill increasing the membership of the Interstate Commerce Commission, but with differences which will necessitate reference to a conference committee.

Senator Hollis, of New Hampshire, called on President Wilson last week, and urged on behalf of the four railroad brotherhoods that there should be no labor legislation at the present session of Congress.

Representative Watkins has introduced a bill in the House, H. R. 5132, directing the Interstate Commerce Commission to give 30 days' notice of hearings to state commissions, attorneys general and commercial organizations that may be interested.

The Interstate Commerce Commission has begun the work of moving from its present quarters, scattered through four different buildings in Washington, to its new office building at Eighteenth street and Pennsylvania avenue, where all of its departments will have modern and commodious quarters under one roof.

The Firemen's Brotherhood, according to an announcement made at the recent Missouri State convention of the order, at St. Louis, will continue to insure the lives of members without any change on account of the war, or the participation of members in war. Many Canadian members of the brotherhood have already gone to the front, and some have been killed. The policies on these lives have been paid in the usual order.

The Central of Georgia Railway has issued a circular proposing that the law of Georgia forbidding the movement of freight on Sunday be suspended for the period of the war. It is pointed out that under the pressure now existing the movement of freight traffic in Georgia is 10 per cent less efficient than in other states (and would be 14 per cent less efficient except that the law permits the movement of perishable freight, etc.).

The "daylight saving" bill, which has been before Congress for several weeks, was this week passed by the Senate without debate, the effective date being made April 1, 1918. Mr. Adamson, who is chairman of the committee which has the bill in charge in the House, and who has been counted among its chief opponents, is quoted as saying that, the Senate having approved the bill, he will no longer object to its consideration in the House.

The division of valuation of the Interstate Commerce Commission has issued a tentative draft of instructions for field work of the telegraph and telephone branch of the engineering section, covering the inventory of telephone property. In addition to general information, it includes detailed instructions for inventorying pole lines, aerial wire, aerial or submarine cables, underground conduits, underground cables, right-of-way, land and buildings, and central office equipment.

The Interstate Commerce Commission has announced a postponement of the effective date of its locomotive headlight order issued last December. The commission's requirements as to headlights will apply to all locomotives constructed after October 1, 1917, instead of July 1, and for locomotives constructed prior to that date the changes required are to be made the first time they are shopped for general or heavy repairs after October 1, but all locomotives are to be equipped by July 1, 1920.

In the Fourteenth street yards of the Chicago, Burlington & Quincy at Chicago on Tuesday evening, June 19, about 10 o'clock, an Adams Express car, in a train being made up (Train No. 3), was robbed of money and jewelry to the value of $23,000. Two messengers in the car were bound and gagged. The robbers, two of them, escaped as the train was backed into the station. It is said that the safe was opened by manipulation of the combination lock. At last accounts it was believed that the robbery was committed by two employees of the railroad company.

A heavy rainfall on June 22 did considerable damage to railroad property in Milwaukee, Wis., and vicinity. The shops of the Chicago, Milwaukee & St. Paul were flooded with water, and the tracks adjoining were covered with slides of mud. A double-track bridge of the St. Paul near Wauwatosa, Wis., was washed out, and there were washouts on the Chicago & North Western 15 miles northwest of Milwaukee. Near Rio, Wis., slides which covered the St. Paul tracks did considerable damage. The rainfall was the heaviest on record at Milwaukee, having been 5½ in.

Senator Pomerene has introduced in Congress a joint resolution, S. J. Res. 77, to provide for the regulation of the production, sale and distribution of coal during the war. The resolution authorizes the President to fix the prices of coal, and to regulate the methods of sale, routes of transportation, and apportionment of coal among merchants and consumers, either directly or through the Federal Trade Commission, or such other agency as he may designate, for the period of the war or for such time as he may consider necessary. If a coal mine operator or dealer conducts his business in a manner prejudicial to the public interest, the President is authorized to take over the business.

The transportation committee of the Cleveland Chamber of Commerce will undertake a survey of the city's freight handling facilities within a few weeks. The survey will require from six months to a year to complete, and will be made by a subcommittee of the committee on transportation. Extensive enlargement and rearrangement of the Cleveland freight terminals, involving the expenditure of millions of dollars, is expected to follow the completion of the investigation. Among the railroad officers who are members of the transportation committee are: J. J. Bernet, president of the New York, Chicago & St. Louis; A. S. Ingalls, general manager of the New York Central, and R. K. Rochester, superintendent of the Pennsylvania Lines at Cleveland.

New Mine-Rescue Cars

Three of the all-steel cars authorized some time ago by Congress for the mine-safety service of the Bureau of Mines have just been delivered, and will take the place of three of the old cars which have been in operation since 1910. These cars are to be located at Reno, Nev.; Raton, N. Mex., and Butte, Mont.

A "Traffic Service Bureau"

This is the name of a school at Thirteenth and Spring Garden streets, Philadelphia, under the charge of R. W. Tunis, which has announced that young women will be given lessons in clerical railroad work without charge; and that the courses of study have been prepared under the direction of Prof. Emory W. Johnson, of the University of Pennsylvania, the well-known writer on railroad topics.

The course consists of ten or twelve lectures and recitations,

designed to enable women to become acquainted with railway terms, forms and correspondence.

The policy of giving the first course free of charge was adopted because the railroads announced that the women to be employed were to take the places of men leaving the railroad service to enter the military, naval and other branches of government service. There proved to be a large demand for instruction, and the enrollment quickly reached 265.

The instruction given consists partly of lectures and partly of problems and practical work. The purpose of instruction is to give the students an introduction to the problems with which they will be confronted upon entering railroad traffic and operating departments, and the school seeks only to make it helpful in a preliminary way to those who are entirely unfamiliar with railroad office work. Should the present course be successful, it is intended to start one giving instruction of a more advanced character to women having prescribed educational qualifications. The course is not in any way subsidized by the railroads.

Employment of Women

The Erie Railroad announces that the number of women employed within the last few weeks in consequence of the scarcity of male help, is about 300.

The Philadelphia & Reading has opened a school at Pottstown, Pa., for the instruction of young men and young women in telegraphy, ticket selling and station accounting. The school already has 24 students, about equally divided between male and female.

Owing to the inability to get draftsmen to fill vacancies caused by the war, E. S. Rice, assistant engineer of the construction department of the Atchison, Topeka & Santa Fe, has employed 12 girls in the drafting room of the construction department at Chicago. If the experiment proves a success more will be employed as occasion demands.

Car Shortage Reduced

The shortage of freight cars in the United States was reduced during May from 148,627 to 105,127 cars—almost one-third. The commission on car service estimates that this marked reduction, following four months of rapid increase, is due to the prompt response of shippers and railroads to the suggestions which have been made by the War Board. On March 1 the reports showed a shortage in the entire country of 130,082 freight cars. The shortage grew to 144,797 by April 1, and on May 1 it was 148,627 cars, as noted above.

The Webb Bill to Promote Export Commerce

The House of Representatives has passed by a majority of 240 to 29 the so-called Webb bill for the promotion of our foreign trade by permitting manufacturers to form co-operative associations similar to those of foreign origin with which they must compete. During the last term of Congress this bill passed the House by a majority of 8 to 1, but was held up in the Senate owing to the great congestion of the Senate calendar during the closing days of the session.

Railway Revenues and Expenses for April

The net operating income of the railways of the United States for April, 1917, was less than in April, 1916, by $9 per mile, or 2.4 per cent, according to the monthly bulletin of the Bureau of Railway Economics.

Total operating revenues, $319,529,688, exceeded those for April, 1916, by $37,569,641. Operating expenses, $227,735,331, were greater by $37,033,648. Net operating revenue, $91,794,357; increased $535,993. Taxes, $14,943,029, increased by $2,296,595. Net operating income was $76,803,598, which is a decrease of $1,747,407.

If spread over the mileage represented, operating revenues averaged $1,383 per mile, an increase over April, 1916, of 13.1 per cent; operating expenses per mile, $986, were greater by 19.2 per cent; net operating revenue per mile, $397, shows an increase of 0.4 per cent, while net operating income per mile, $332, shows a decrease of 2.4 per cent. Taxes per mile rose 17.9 per cent.

This summary covers 230,959 miles of operated line, or about 90 per cent of the steam railway mileage of the United States.

For the Eastern railways, operating revenues per mile were

REVENUES AND EXPENSES OF STEAM ROADS—APRIL, 1917.

Compiled from monthly returns of the railways to the Interstate Commerce Commission and covering roads of Class I, *i. e.*, roads with annual operating revenues above $1,000,000.

Account	United States				Eastern District				Southern District				Western District			
		Per mile of line				Per mile of line				Per mile of line				Per mile of line		
	Amount, 1917	1917	1916	Increase over 1916 Per cent	Amount, 1917	1917	1916	Increase over 1916 Per cent	Amount, 1917	1917	1916	Increase over 1916 Per cent	Amount, 1917	1917	1916	Increase over 1916 Per cent
Total operating revenues	$319,529,688	$1,383	$1,223	13.1	$143,523,745	$2,424	$2,194	10.5	$47,864,613	$1,120	$983	13.9	$128,141,330	$993	$856	16.1
Freight	228,420,649	989	879	12.5	101,179,223	1,709	1,560	9.6	35,303,276	826	733	12.8	91,938,150	712	615	15.9
Passenger	60,304,095	261	227	14.9	26,773,444	452	406	11.6	8,931,009	209	175	19.3	24,599,642	191	163	17.2
Mail	4,963,797	21	22	d 0.8	1,974,718	33	31	6.5	762,968	18	15	18.9	2,226,111	17	19	d 11.2
Express	8,666,833	38	31	21.6	4,219,274	71	58	22.4	1,173,081	27	26	5.2	3,274,478	25	20	27.9
All other	17,174,314	74	64	16.4	9,377,086	159	139	14.1	1,694,279	40	34	14.7	6,102,949	48	39	20.9
Total operating expenses	227,735,331	986	827	19.2	107,340,042	1,813	1,508	20.3	32,874,642	769	648	18.6	87,520,647	678	573	18.3
Maintenance of way and structures	38,666,437	167	156	7.2	15,316,495	258	247	4.7	5,692,265	133	122	9.1	17,657,677	137	126	9.0
Maintenance of equipment	54,490,761	236	208	13.3	26,342,011	445	391	14.0	8,654,463	203	181	11.9	19,494,287	141	133	13.3
Traffic	5,304,454	23	22	5.3	2,000,426	34	32	4.8	997,357	23	22	7.0	2,306,671	18	17	5.1
Transportation	119,280,286	516	405	27.7	59,081,121	998	772	29.2	16,212,777	379	295	28.5	43,986,388	341	271	25.7
General	7,769,153	34	29	14.8	3,436,265	58	50	16.5	1,160,744	27	25	7.6	3,172,144	24	21	15.8
All other	2,224,240	10	7	30.7	1,163,724	20	16	23.1	157,036	4	3	18.1	903,480	7	5	45.3
Net operating revenue	91,794,357	397	396	0.4	36,183,703	611	686	d 10.9	14,989,971	351	335	4.7	40,620,683	315	283	11.4
Taxes	14,943,029	65	55	17.9	5,840,620	99	87	13.3	2,592,520	61	42	45.0	6,509,889	50	45	13.8
Uncollectible revenues	47,730	*	*	....	18,854	*	*	....	9,655	*	*	....	19,221	*	*	....
Operating income	76,803,598	332	341	d 2.4	30,324,229	512	599	d 14.4	12,387,796	290	293	d 0.9	34,091,573	265	238	11.0
Operating ratio—per cent—																
1917		71.3				74.8				68.7				68.3		
1916		67.6				68.7				65.9				67.0		
Average mileage represented—																
1917		230,959				59,200				42,738				129,021		
1916		230,544				59,225				42,535				128,784		

d Decrease.
* Less than one dollar.

greater than those for April, 1916, by 10.5 per cent; operating expenses rose 20.3 per cent; net operating revenue decreased 10.9 per cent; taxes increased 13.3 per cent. Operating income per mile decreased 14.4 per cent.

For the railways of the Southern district, operating revenues per mile exceeded those for April, 1916, by 13.9 per cent; operating expenses rose 18.6 per cent, net operating revenue increased 4.7 per cent; taxes increased 45 per cent. Operating income per mile decreased 0.9 per cent.

For the Western railways, operating revenues per mile exceeded those for April, 1916, by 16.1 per cent; operating expenses rose 18.3 per cent; net operating revenue increased 11.4 per cent; taxes increased 13.8 per cent. Operating income per mile increased 11 per cent.

The four months of the current calendar year, compared with the corresponding period of the preceding year, show changes per mile of line as follows: Operating revenues increased 9.4 per cent, operating expenses increased 16.4 per cent, net operating revenue decreased 6 per cent, taxes increased 13.6 per cent, while operating income decreased 9.4 per cent.

Operating income per mile decreased 27.6 per cent in the East, increased 3.7 per cent in the South, and increased 5.8 per cent in the West.

April net operating income per mile was 2.4 per cent less in 1917 than in 1916, 38.4 per cent greater than in 1915, 61.6 per cent greater than in 1914, and 55.3 per cent greater than in 1913.

Lackawanna Dining Car Prices

Following are some of the "war portion" items, which have appeared on the breakfast bill of fare of Lackawanna Railroad dining cars since the company began its war-time food economy campaign:

Strawberries with Cream	30c	20c
Glass Orange Juice	25c	15c
"Mammoth" Prunes	25c	...
Breakfast Cereals, with Cream	25c	15c
Shredded Wheat Biscuit (2)	30c	(1) 20c
Bacon and Eggs	70c	45c
Broiled or Fried Ham or Bacon	60c	40c
Eggs Boiled, Fried, Scrambled or Poached (2)	30c	(1) 15c
Potatoes—French Fried or Hashed Brown	25c	15c
Rolls, or Bread with Butter	10c	...
Dry or Buttered Toast	15c	10c
Cream Toast	35c	25c
Tea, Coffee or Cocoa, Individual Pot	15c	...

The Railroad Year in Canada

Hon. Frank Cochrane, Canadian Minister of Railways, in his annual statement to the House of Commons reported a surplus of earnings over operating expenses amounting to $1,137,713 on the Intercolonial Railway system, and a deficit of $1,966,626 on the National Transcontinental Railway during the past fiscal year. The government railroad system now comprises 4,063 miles, made up of the Intercolonial, 1,562 miles; Transcontinental, 2,009 miles; Prince Edward Island Railway, 275 miles; International Railway, 112; St. John Valley, 105.

The earnings of the Intercolonial, Mr. Cochrane said, were abnormally low during the four winter months because the road was engaged in hauling war materials, and had to embargo many kinds of freight which paid higher rates. Moreover, on that line the operating expenses were augmented by increased cost of coal, materials and supplies and increased wages, and also by the unfavorable weather conditions and the congestion of traffic at Montreal.

Total receipts on the Intercolonial were $16,802,290, and operating expenses $15,664,577, leaving a surplus of $1,137,713, as compared with $1,517,295 in 1915-16. The surplus, said the minister, would be absorbed by the equipment renewal account.

On the Transcontinental the receipts amounted to $5,916,550, as compared with $3,758,387 in 1915-16, and operating expenses were $7,883,177, as compared with $4,410,528. The deficit was due to the comparatively small amount of traffic offering; to the fact that trains not warranted by business had to be established, and to the necessity for maintaining the road at the standard of other transcontinental lines. The operating expenses of the entire government railway system for the fiscal year ended March 31 last were $24,645,433, as compared with $17,797,061 in 1915-16; the earnings were $23,465,565 as against $18,373,143; deficit for the whole system, $1,179,867. The total number of passengers carried on the system was 5,673,796, including 277,155 men of the military and naval forces, who traveled in 443 special trains.

The total estimated cost of the work on the Prince Edward Island car ferry terminals and the railways leading thereto is $2,910,000, of which $2,600,000 has been expended. Rails have been laid on the Hudson Bay Railway to Mile 332, which is the second crossing of the Nelson river. Of the 92 miles of line remaining between the bridge and Port Nelson all is graded but 11 miles. The bridge across the Nelson will be completed this summer, and the rails will be laid into Nelson this year. Work has been slackened on the Nelson harbor owing to war conditions. The estimated cost of railway and harbor work is $26,000,000, of which $18,175,000 has been expended, $12,565,000 on the railway, and $5,610,000 on harbor terminal work.

National Association of Owners of Railroad Securities

The officers and executive committee of the National Association of Owners of Railroad Securities, organized on May 23, at a conference held in Baltimore of 500 representatives of three billion dollars of railroad securities, have been announced as follows: President, S. Davies Warfield, Baltimore, Md., president, the Continental Trust Company; vice-presidents, Eastern district, Forrest F. Dryden, Newark, N. J., president, Prudential Insurance Company of America; Central district, John J. Mitchell, Chicago, Ill., president, Illinois Trust and Savings Bank; Southern district, T. K. Glenn, Atlanta, Ga., president, Atlantic Steel Company; Western district, Charles C. Moore, San Francisco, Cal., president, Panama-Pacific International Exposition; Southwestern district, I. H. Kempner, Galveston, Tex., president, Texas Bank & Trust Company; treasurer, J. Hough Cottman, Baltimore, Md., of J. H. Cottman & Co.. Executive committee: S. Davies Warfield, chairman; Charles F. Adams, Boston, Mass., treasurer, Harvard University; John T. Baxter, Minneapolis, Minn., president, Northwestern National Life Insurance Company; Louis F. Butler, Hartford, Conn., president, The Travelers Insurance Company; James E. Caldwell, Nashville, Tenn., vice-president, Fourth and First National Bank; Walter F. Coachman, Jacksonville, Fla., chairman of board, Consolidated Naval Stores Company; David R. Coker, Hartsville, S. C.; F. H. Ecker, New York, N. Y., treasurer, Metropolitan Life Insurance Company; Crawford H. Ellis, New Orleans, La., vice-president, United Fruit Company; Jacob Epstein, Baltimore, Md., proprietor, Baltimore Bargain House; Henry Evans, New York, N. Y., president, Continental Insurance Company, Fidelity-Phenix Fire Insurance Company and American Eagle Fire Insurance Company; William M. Hayden, Baltimore, Md., president, Eutaw Savings Bank; Robert Jemison, Sr., Birmingham, Ala., former president, Birmingham Railway Light & Power Company; George K. Johnson, Philadelphia, Pa., president, Penn Mutual Life Insurance Company; F. J. Kell, Wichita Falls, Tex., Kell Milling Company; Darwin P. Kingsley, New York, N. Y., president, New York Life Insurance Company; Harold Kountze, Denver, Col., chairman of board, Colorado National Bank; George C. Markham, Milwaukee, Wis., president, Northwestern Mutual Life Insurance Company; Henry A. Page, Aberdeen, N. C., vice-president, Page Trust Company; Walter J. Raymer, Chicago, Ill., vice-president, Chicago Association of Commerce; Henry A. Schenck, New York, N. Y., president, Bowery Savings Bank; Henry T. Scott, San Francisco, Cal., former president, Union Iron Works; A. L. Shapleigh, St. Louis, Mo., president, Shapleigh Hardware Company; John G. Walker, Richmond, Va., president, Life Insurance Company of Virginia; Clarence W. Watson, Fairmont, W. Va., chairman of board, Consolidation Coal Company; John F. Wilkins, Washington, D. C., former owner of Washington Post; Ernest Woodruff, Atlanta, Ga., president, Trust Company of Georgia; Clifford B. Wright, Cincinnati, O., president, Union Savings Bank & Trust Company.

The Baltimore conference appointed a committee on permanent organization of 80 members from 56 of the principal cities of the country. This committee has now been made permanent as the advisory committee, and is in addition to the executive committee. A general committee of 96, two members from each state, was also authorized and will shortly be announced. A declaration of principles adopted sets forth the objects of the association. Its committees very prominently represent a great

and widely diversified ownership in railroad securities. Headquarters have been established in Baltimore.

President Warfield in announcing the officers made the following statement: "This association rests squarely on the vast ownership of railroad securities, universal in distribution and extent, which is the reason for its existence and for its support. Surprising as it is true, fully fifty million people of the country have a very definite ownership in railroad securities. Thirty-three million have life insurance policies in mutual companies and eight million have deposits in mutual savings banks. There are no stockholders of these institutions, their policyholders and depositors mutually own them and their securities, which include two and a quarter billion dollars in railroad bonds. Nine million more people own railroad securities, individually or through stock ownership in financial and other institutions; so do charitable bodies, schools and colleges. Therefore all questions affecting the carriers are of considerable public moment. The credit of the railroads requires that they be permitted to earn a margin over operating expenses, taxes and fixed charges sufficient to protect present owners and attract prospective owners of their securities. If not, the carriers can be financed only at a cost curtailing their development, lessening their efficiency, with higher operating costs, all of which must react finally upon those who purchase transportation and depend upon its efficiency for the development of their own business or their own property. Three-fifths of the seventeen billions' aggregate of railroad securities consist of mortgage bonds—a majority in ownership of railroads, yet with no voice, which this association now will largely represent in addition to stockholders. The voice of the owners of the carriers should be heard along with the voice of the users of transportation in solving their problems. This association is not to become a critic of those in authority over the carriers; its wish is to be helpful, and to be among those considered, whenever and wherever questions are decided by governmental agencies—national or state—which affect those it represents."

Coal Prices to be Fixed by Committees

At a meeting of approximately 400 coal operators held at Washington on Tuesday at the call of F. S. Peabody, chairman of the Committee on Coal Production of the Council of National Defense, resolutions were adopted pledging the operators to sell their product "at a fair and reasonable price" to be fixed, with the approval of the Committee on Coal Production, by special committees of operators from each coal mining state. The special committees are also to confer with the council's committee "to the end that production be stimulated and plans be perfected to provide adequate means of distribution." Before the resolutions were adopted the operators were addressed by Secretaries Lane and Daniels, John T. Fort of the Federal Trade Commission, and T. L. Lewis, assistant to the attorney general, who appealed to their patriotism, and also frankly stated that unless the operators established of their own will a fair selling price for coal and proper regulation of the industry, the government would be forced to take over their output. Secretary Lane told the operators that the best thing for them to do was to put into the hands of one man or of a small group of men the fixing of prices, rather than to compel the government to use a strong hand. Assurance was given that there would be no prosecution by the government on account of an agreement on prices with a government agency. Mr. Fort placed a large part of the blame for coal conditions on the railroads. Chairman Peabody qualified Mr. Fort's remarks with the statement that "some of the railroads are good and some are bad."

The Senate Committee on Interstate Commerce on Tuesday began a hearing on bills to regulate the price of coal and other basic materials, and heard a large number of operators. Many attributed the high price of coal to car shortage.

Governor Goodrich, of Indiana, in a letter to the Federal Trade Commission, said that it is being clearly demonstrated in his state that the operators do not want an adequate supply of cars. "We find them loading cars light, and slow about loading cars delivered to them," he said. He suggested that the Interstate Commerce Commission be given power to order preference given to certain kinds of freight, and that a prohibitive demurrage rate should be made effective after 48 hours.

The President met with the entire Federal Trade Commission on Saturday afternoon, and for more than an hour discussed the activities of the commission in obtaining costs on various commodities, and particularly with reference to the production cost of steel and lumber. He requested the commission to make investigations into these two subjects, which will be done at once. The commission has a staff of about 200 special investigators who can be assigned to the investigations.

At a meeting on Wednesday the coal operators arranged for the establishment of a permanent bureau in Washington to gather statistics, co-ordinate them, and be the intermediary between the coal associations and local bureaus and the government.

Canadian Rails in Europe

The Canadian Minister of Railways, reporting to Parliament at Ottawa, concerning the shipment of rails for use on the battle front in France and Belgium, in response to the last request from the British Government, says that rails are being procured from the line of the Grand Trunk Pacific, through the Yellowhead Pass, from Imrie to Resplendent, a distance of 207 miles. By taking some rails from the Canadian Northern line between these two points, a composite line will be made, which will serve the industries of the district and put the settlers to the minimum amount of inconvenience. The composite line will be composed of 128 miles of Canadian Northern roadbed and 77 miles of Grand Trunk Pacific.

The work of lifting the rails of the Grand Trunk Pacific is being done by all the section men on the sections of line affected, all the available local labor and 150 soldiers belonging to a construction battalion. The first shipment of rails will be in transit to Three Rivers this week and the balance will be on the way by the end of July.

Canadian Northern rails are not being sent to Europe because they are not so suitable as those of the Grand Trunk Pacific.

Superintendents Postpone 1917 Convention

At a meeting at St. Louis on June 18 the executive and advisory committee of the American Association of Railroad Superintendents indefinitely postponed the 1917 convention of the association. The following resolution was passed:

"Whereas, this nation has become involved in a conflict for the defense of democracy, which means the right of those who submit to authority to have a voice in their own government, and,

"Whereas, we are confronted by perhaps one of the gravest situations ever imperiling a free people, rendering it necessary that the transportation forces be conserved in all directions, be it

"Resolved, that this association, pledging as it does its loyalty and support to the Government in defense of liberty, justice and humanity, also offers its service to the President of the United States in whatever manner he sees fit to use it; and, be it further

"Resolved, that the annual meeting at Minneapolis, Minn., which was to be held on August 8, 9 and 10, 1917, be indefinitely postponed."

American Railway Tool Foremen's Association

At a joint meeting of the officers and executive committees of the American Railway Tool Foremen's Association and the Supply Association held at the Hotel Sherman, Chicago, June 2, 1917, it was unanimously voted that the ninth annual convention of the association should be postponed for one year.

The American Railway Tool Foremen's Association and the Supply Association jointly donated the sum of $50 to the American Red Cross.

The secretary-treasurer has been instructed to publish the 1917 Year Book as heretofore.

International Railroad Master Blacksmiths' Association

At a meeting of the executive committee of the International Railroad Master Blacksmiths' Association held in Chicago, May 26, it was voted to postpone for one year the annual meeting of the association, which was to have been held in August at Chicago.

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings and places of meeting of those associations which will meet during the next three months. The full list of meetings and conventions is published only in the first issue of the Railway Age Gazette for each month.

AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—F. A. Pontious, 455 Grand Central Station, Chicago. Next meeting, July 18, 1917, Asheville, N. C.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Harman, Room 101, Union Station, St. Louis, Mo. Annual meeting, August 8-10, Minneapolis, Minn.

AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa. Next annual meeting, June 26-29, Hotel Traymore, Atlantic City, N. J.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—W. L. Connelly, Supt. of Telegraph, Indiana Harbor Belt, Gibson, Ind. Next annual meeting, September 11-13, 1917, Washington, D. C.

CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.

CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.

CAR FOREMAN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.

CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual dinner, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—W. R. McMunn, New York Central, Albany, N. Y. Next convention, September, 1917, St. Louis.

CINCINNATI RAILWAY CLUB.—H. Boutet, Chief Interchange Inspector, Cin'ti Rys., 101 Carew Bldg., Cincinnati. Regular meetings, 2d Tuesday, February, May, September and November, Hotel Sinton, Cincinnati.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 568 Union Arcade Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3rd Tuesday, Pittsburgh, Pa.

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month, Room 1856, Transportation Bldg., Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, C. H. & D., Lima, Ohio. Next annual meeting, August 21-23, 1917, Chicago.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Next annual meeting, September 11, 1917, Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—Geo. A. J. Hochgrebe, 623 Brisbane Bldg., Buffalo, N. Y. Meetings, 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.

PACIFIC RAILWAY CLUB.—W. S. Wollner, Assistant to Chief Engineer, Northwestern Pacific R. R., San Francisco, Cal.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—F. C. Stewart, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.

RAILROAD CLUB OF KANSAS CITY.—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meteings, 3d Saturday in month, Kansas City.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Pittsburgh Commercial Club Rooms, Colonial-Annex Hotel, Pittsburgh.

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Myers Bldg., Bethlehem, Pa. Next annual convention, September, 1917, Atlantic City, N. J.

RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W., Sterling, Ill. Next annual convention, September 18-21, 1917, Hotel Auditorium, Chicago.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grand Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 a. m., Piedmont Hotel, Atlanta.

TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.

TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Gen'l Ag't, Erie R. R., 1924 Oliver Bldg., Pittsburgh, Pa. Meetings bi-monthly, Pittsburgh.

TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7122 Stewart Ave., Chicago. Next meeting, June 19, Fresno, Cal.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, N. Y. C. R. R., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. R. R., Cleveland, Ohio. Next convention, September, 1917, Chicago.

UTAH SOCIETY OF ENGINEERS.—Frank W. Moore, 1111 Newhouse Bldg., Salt Lake City, Utah. Regular meetings, 3d Friday in month, except July and August, Salt Lake City.

WESTERN CANADA RAILWAY CLUB.—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Monday in month, except June, July and August, Hotel Sherman, Chicago.

Traffic News

At a meeting of Western traffic officers at Chicago last week it was agreed that in future payment for sleeping car berths must be made on the date of making the reservation.

The Louisville & Nashville announces that, on trains which have a dining car, the waiters will pass through the coaches, either before or after each meal, and offer food for sale from trays.

The Southern Railway in Mississippi and the Mobile & Ohio jointly will run a live stock and dairy instruction train over their lines in Alabama and Mississippi commencing July 16 and continuing seven weeks.

On Monday last the Pennsylvania Railroad had at its New York terminus 490 carloads of new Southern potatoes. The movement of Southern potatoes into New York City over this road since the first of June has totaled 278,000 barrels, an increase of 53,000 over the receipts in the same period of last year.

The Southern Railway, on the occasion of the annual reunion of the United Confederate Veterans at Washington, in the week beginning June 4, carried into Washington, from the morning of June 2 to noon of June 8, a total of 26,490 passengers. This road ran 43 special trains, besides 512 special cars on regular trains, all without accident to any train or passenger.

The San Francisco (Cal.) Traffic Club was organized on May 24 to succeed the La Salle Traffic Club. Membership in the club is open to persons engaged or interested in the traffic profession who desire to join in the study and mutual discussion of traffic matters. The headquarters are in the Call building, San Francisco, and the officers are: President, W. T. Bozeman; vice-president, A. L. Fowle; secretary, L. N. Bradshaw, and treasurer, T. H. Fox.

The railroads of the State of New York have filed with the Public Service Commission, Second district, their tariffs providing a 15 per cent increase in intrastate freight rates parallel with the increases in interstate rates for which they have already asked the Interstate Commerce Commission. The Public Service Commission held a hearing on June 25 at Albany, and intimates that the conclusion of the Federal body probably will be followed in intrastate rates except in particular cases where local conditions may require a different determination.

In addition to the states in which the railroads have so far filed applications for a 15 per cent horizontal increase in freight rates, as noted previously in the *Railway Age Gazette*, applications have been filed with the commissions in Idaho, Minnesota, Montana, New York, Oregon and Utah. On June 18 the Minnesota Railroad and Warehouse Commission continued further hearings on the application of the Minnesota roads until July 5. The railroads of Florida have been notified by the State Railroad Commission that the proposed increase in freight rates cannot be authorized until after a public hearing, and that, because of the importance of the subject the hearing should not be held under 30 days' notice, which would bring it about July 15. The railroads of Georgia have had the question of increased freight rates before the state commission for several months, and protracted hearings have been held; but on June 18 the roads all filed a new petition, asking for a minimum horizontal increase of 15 per cent without delay. The commission, however, at last accounts had not indicated when it would hold a hearing on the new petition.

The Traffic Club of Pittsburgh held its annual meeting and election of officers on June 11. Charles McNicholl, district freight agent of the American Bridge Company, at Pittsburgh, was elected president; J. G. Code, general manager of the Pittsburgh & West Virginia, was elected first vice-president; George A. Buse, president of Buse & Caldwell, second vice-president; D. L. Wells, general agent of the Erie, third vice-president; Almer H. Orr, agent of the Atlantic Coast Dispatch, secretary, and William F. Morris, Jr., general freight agent of

the Crucible Steel Company, treasurer. The personnel of the board of governors for the coming year is as follows: C. B. Ellis, traffic manager of the Gulf Refining Company; J. A. Fitzpatrick, general agent of the Toledo, St. Louis & Western; E. B. Mitchell, district freight solicitor of the Pennsylvania system; J. B. Rider, vice-president and general manager of the Pressed Steel Car Company; J. V. Styers, general freight agent of the Bessemer & Lake Erie. At the same meeting the club decided to invest a portion of its surplus funds, amounting to several thousand dollars, in Liberty bonds.

Reductions in Passenger Service

President Wilson sees no sufficient reason for foregoing conventions. This opinion is expressed in response to a letter from William Fellowes Morgan, president of the Merchants' Association of New York City, who said that the present tendency to forego the holding of conventions and general commercial meetings because of a desire to practice alleged economy was based on a false idea of economy. He believes that the application of this idea will be harmful, rather than beneficial, both to the Government and to the nation's business. "Such gatherings should be encouraged rather than discouraged, because failure to hold them as usual is likely to create a false impression, and to discourage mutual co-operation." With this view the President agreed.

The Public Service Commission of Massachusetts has taken no action in connection with the reduction in the number of passenger trains run on the roads in the state, the commissioners having reached the conclusion that the companies have endeavored to exercise reasonable discrimination in the selection of trains which might be eliminated. The Boston & Maine has made a considerable reduction in the number of trains which it had proposed to take off. The State Railroad Commission of Kentucky has approved the consolidation of certain passenger trains on the Southern Railway between Cincinnati and Chattanooga. The Railroad Commission of Georgia, having held a hearing on the petition of the Southern Railway for authority to discontinue 15 passenger trains, now running in that state, ha' issued an order approving the company's action in regard to nine trains only.

The Georgia railroad commission has denied the application of the Augusta Southern to be allowed to make all of its passenger service a mixed service, to the extent of specifying that trains Nos. 2 and 3 must be operated exclusively as passenger trains. The same commission has granted the petition of the Wadley Southern to operate its trains Nos. 43 and 44 mixed tri-weekly instead of six days a week as at present. The East Georgia is authorized to substitute a single daily passenger service between Register and Gleanville, instead of the present double daily service. The petition of the patrons of the Talbotton railroad that the Sunday service of that road be discontinued in order that the trainmen may go to church has been granted. This petition is asquiesced in by the road. The Central of Georgia has petitioned the Georgia commission for leave to discontinue certain trains and the commission has set the petition for hearing this week.

The Pennsylvania Railroad announces new time tables, to go into effect July 1, which show numerous trains discontinued, the aggregate (east of Pittsburgh) being about 6,000 train miles daily. There is no important change in express trains between New York and Philadelphia.

The Delaware, Lackawanna & Western has laid before the New Jersey Board of Public Utility Commissioners proposed new time tables taking off 33 suburban trains.

Kentucky Coal-Traffic Situation

Milton H. Smith, president of the Louisville & Nashville, who was recently called before the Jefferson county (Ky.) grand jury, which is seeking a remedy for the high price of coal, has issued a statement laying the blame for present difficulties on a law which allows coal mining companies to designate the destination of coal shipments on "piratical" northern roads, which hold cars unreasonably, and on the "ingratitude" of mine operators who have forgotten the railroads, which helped them to develop the Kentucky fields when the eastern coal supply was abundant and cheap.

On June 1, he said, 17,540 out of 24,000 L. & N. coal cars were held by other roads. The L. & N. has not increased freight rates, has built 2,700 coal cars since January 1, and has hauled 1,100,472 more tons of coal the first three months of 1917 than in 1916. Mr. Smith said that the L. & N. was equipped to handle every ton of coal mined in Kentucky.

"The Greater Port of New York"

The New York Evening Post of June 20 has a supplement of 116 pages, with the above title, describing in great detail the railroad freight and shipping facilities of New York City, with many illustrations, voluminous chapters of statistics and history. One of the articles is by J. C. Lincoln, traffic manager of the Merchants' Association. Among the subjects treated are the proposed Brooklyn Marginal Railway, the Erie Canal, and the effect of the war on shipping.

More Loyal Loaders in Louisiana

The American Railway Association's Commission on Car Service, as an incident in its campaign to secure more intensive car loading, reports another case which deserves mention. During the week ending May 19 the Myles Salt Company, Weeks Island, La., loaded 3,331,004 lb. into cars having a marked capacity of 3,070,000 lb. This was equivalent to 108 per cent of the marked capacity of the cars. During the succeeding week the same concern loaded 4,420,000 lb. into cars having a marked capacity of 4,150,000 lb. This was equivalent to 106 per cent of the marked capacity of the cars. Weeks Island is on the Southern Pacific, 120 miles west of New Orleans.

Getting Down to Brass Tacks

Relief from the shortage of anthracite coal in New England is in sight. Fifty-car trains are to be run from a mine in Pennsylvania direct to central points in New England. James J. Storrow, chairman of the New England committee which brought this about, has made four trips to Washington and one to Philadelphia, and says: "We shall run our solid train, without dropping a car, straight through from the mine to Manchester [and other distributing points] in less than 100 hours instead of the fortnight it now takes, or frequently a month. When this train-load program has been working for a short time we think New England will be back on the coal map. We absolutely cannot get, under present conditions, coal cars for this train movement unless we can count on indefatigable co-operation in unloading. We have been obliged to promise that every one of these cars will be unloaded in one day, so it can start right back to the mines for the next train-load. Hoist a flag, call in your neighbor, ask the store clerk, the clergyman, the mayor or any one to pitch in and help you get that car unloaded before the sun sets. We shall be obliged in the interest of New England consumers to chop off this train-load supply from any man who has not sufficient help, or who has not sufficient standing with his neighbors to get the help needed to unload his car by sunset. . . . As to soft coal, I hope we can say something definite within a few days."

Interstate Freight Rates in New Mexico

On Friday, June 15, the Corporation Commission of New Mexico held a hearing on the proposed 15 per cent advance in intrastate rates requested by the railroads operating in that state. The railroads petitioned for this advance in May, contingent upon the approval of the interstate 15 per cent advance by the Interstate Commerce Commission. The state commission allowed the tariff to be issued effective July 1, but subject to investigation, protests and complaints.

In presenting the railways case J. R. Koontz, general freight agent of the Santa Fe and chairman of the committee selected by the New Mexico lines, declared that the cost of maintaining and operating railways has advanced steadily in the last few years, the same as in other industrial and commercial lines, but with the difference that other kinds of business have been permitted to increase prices while the railroads have not. He also said that the railways simply desired an opportunity to adjust their prices according to the rules of price recognized as right and proper in the world of business.

He submitted a comparison of coal rates in New Mexico with those in Colorado and those from Colorado to Kansas, showing

that the New Mexico rate has been favored. In regard to the class rate used by wholesalers in distributing merchandise to retailers from the jobbing points throughout the state, Mr. Koontz gave testimony to show that the present rates on merchandise classes for all distances of 400 miles or less are considerably lower than the class rates ordered by the Interstate Commerce Commission from Shreveport, La., to points in Texas. The density of tonnage in Texas where these rates apply was shown to compare favorably with that in New Mexico, while the population per square mile of railroad is greater in west Texas than in New Mexico. He also showed that the New Mexico class rates in effect today are lower than the rate ordered by the Interstate Commerce Commission from Memphis, Tenn., to points in Arkansas where the density of tonnage is greater than in any of the western states.

In answer to inquiries concerning the relation between Arizona and New Mexico intrastate rates, Mr. Koontz stated that a shipment which moves 50 miles in Arizona for 27 cents for 100 lb. moves in New Mexico for 23 cents at present. The 15 per cent increase sought would raise the New Mexico rate to 26½ cents, still leaving it under the Arizona rate.

George W. Oliver, Chicago, chief statistician of the Santa Fe, submitted the opinion of the United States Supreme Court in the Arkansas rate case to show that recognition has been taken of the fact that the expense of short haul or intrastate traffic is much greater proportionally than for the long haul or interstate traffic. He also said that everything entering into the maintenance and operation of railway property had advanced rapidly in the year. Fuel, for instance, he said, had gone up 25.16 per cent, and the Santa Fe's increased expense for labor in freight service in New Mexico on account of the Adamson law will be $138,365 for 1917 on the basis of the 1916 operation, of which 26.99 per cent is assignable to intrastate service.

The Illinois Passenger Rate Case

The conflict between federal and state authority in regard to passenger fares in Illinois is now agitating Washington, as well as Chicago and St. Louis. The effort to get action by Congress is noticed in another column of this paper. Prior to the action of Senator Sherman, the Illinois authorities had sent representatives to Washington to see if the United States attorney-general could do anything, and an attempt was made also to get the Interstate Commerce Commission to postpone its order; but the commission declined to act, and nothing was accomplished.

The Illinois legislature on June 16 adopted a resolution directing the State Public Utilities Commission to suspend the hearings on the application of the railroads for authority to make advances in freight rates, until they should have ceased their "defiance of the laws of the state"; and, in compliance with this request, the Utilities Commission postponed its proposed hearing for 120 days.

The Illinois railroads have this week filed, in the Superior Court of Cook County, their answers to the charges of being in contempt of court for violating the preliminary injunction prohibiting them from raising intrastate fares from 2 cents to 2.4 cents. Judge Foell postponed the final hearing on the case for six months, at the end of which time the United States Supreme Court is expected to have decided the injunction suit in which the court was asked to restrain the state authorities from prosecuting railroads for putting the higher fares into effect. The answer of the Chicago & Alton and of most of the other roads insisted that the Superior Court was without jurisdiction; and also that the carriers cannot reduce the interstate fares from St. Louis and Keokuk to Illinois points, to the basis of 2 cents a mile (for the purpose of removing discrimination), for by so doing discriminations would be created, in favor of those cities, against all other points on the Mississippi river in Missouri and Iowa. The establishment of the 2-cent basis would also violate the fourth section of the Commerce Act, as it would throw the entire rate structure of the railroads west of the Mississippi out of alinement; and it would substitute for the judgment of the Interstate Commerce Commission as to what is a reasonable rate, the judgment of the Illinois legislature. It would compel the railways to accept interstate fares lower than were found reasonable by the Interstate Commerce Commission. Until the conclusion of the continued hearing before the Superior Court the 2.4 cent rates will remain in force.

Commission and Court News

INTERSTATE COMMERCE COMMISSION

The Interstate Commerce Commission on Monday announced that after an informal hearing by the board of suspension on proposed increases of 15 cents per ton in the rates on bituminous coal between points in Official Classification territory, the commission voted not to suspend the protested rates, and they will become effective on July 1. The increases apply from Pennsylvania, Maryland, West Virginia, Kentucky, Tennessee and Ohio producing fields to points east of the Mississippi river, and north of the Ohio river.

PERSONNEL OF COMMISSIONS

Judson C. Clements

Judson C. Clements, who on March 17 completed 25 years of service as a member of the Interstate Commerce Commission, died suddenly on June 18 at his home in Washington. He became a member of the commission on March 9, 1892, succeeding Walter L. Bragg, and had been appointed and reappointed by five different presidents.

Judson C. Clements

He was born in Walker county, Georgia, on February 12, 1846, attended the common schools, and studied law at Cumberland University, Lebanon, Tenn. He was admitted to the bar in 1869, and practiced law at Lafayette, Ga., until 1877, when he removed to Rome, Ga. He was county commissioner of Walker county in 1871; a representative in the Georgia legislature from 1872 to 1876, and state senator in 1877 to 1880. From 1881 to 1891 he was a representative from Georgia in the Federal Congress, and for a year he had been president of the Chattanooga, Rome & Columbus Railroad. His appointment to the Interstate Commerce Commission followed his retirement from Congress. When but 16 years of age he had enlisted in the Confederate army at the outbreak of the Civil war, and at the close of hostilities he retired as a first lieutenant.

In Georgia and in Congress Judge Clements was a representative of the conservative yet progressive type of men that succeeded the more radical element after the war, and he became one of the strong men in Congress. As a member of the Interstate Commerce Commission his work has been characterized by faithful attention to duty and a sincere effort to give the best that was in him to promote justice in the relations between the carriers and the public. Through his long experience as a member of the Interstate Commerce Commission, from the days when it had little power to the time when it has had such complete control over the transportation affairs made subject to its jurisdiction, Judge Clements gained a remarkable familiarity with railroad affairs and railroad history, and he has naturally taken a most active part in the development of commission regulation of railroads, having contributed considerable assistance to President Roosevelt in securing the passage of the Hepburn law of 1906. At no time has he been regarded by railway interests as other than fair and just, but he has been keenly solicitous of the interests of the general public as he saw them, and the fact that he has so often found himself in opposition to the position taken by the railroads has not been due to any inherent hostility to railroads, although it may have been affected by some of the impressions gained during the

early days of railroading and of "high finance." He has generally been opposed to the efforts of the roads to obtain general advances in rates, and has been an uncompromising advocate of regulation of security issues. Personally Judge Clements was one of the most lovable of men, and was unusually popular with all with whom he was associated.

COURT NEWS

Assumption of Risk

The Kentucky Court of Appeals holds that the danger of attempting to cross a track in front of an engine only a few feet away and approaching at a speed of 6 to 9 miles an hour is so obvious and imminent that a trackman, even if ordered by his foreman to do so, assumes the risk, he knowing the train was coming and it being in plain sight.—L. & N. v. Williams (Ky.), 194 S. W., 920. Decided May 18, 1917.

Attraction to Children

The Arkansas Supreme Court holds that where a railroad tie company piled tiles insecurely, and the railroad placed a pile of sand in such proximity thereto that a child, attracted to the spot by the sand and the ties, was injured when the stack fell, the railroad was not liable for the negligence in piling the ties insecurely, but was liable for allowing such condition to continue if it was reasonably to be anticipated that children attracted by the sand pile might be injured.—Foster v. Lusk (Ark.), 194 S. W., 854. Decided April 30, 1917.

Excessive Damages

A switchman, 37 years old, with a life expectancy of 29 years, earning from $100 to $125 a month, obtained a verdict of $17,500 for an injury to his foot which would prevent him from continuing in his usual occupation, and would greatly lessen his capacity for earning money, but would not wholly incapacitate him. The Nebraska Supreme Court held the verdict to be excessive, and that the plaintiff should be required to remit all in excess of $12,000.—Stapleton v. C. B. & Q. (Neb.), 162 N. W., 644. Decided May 5, 1917.

Crossing Accident—Negligence of Automobile Passenger

The fact that a passenger in an automobile, injured at a crossing, was not the driver, does not absolve him from all care. In an action for the death of an automobile passenger it appeared that the car was approaching a crossing where the view was obstructed, at a speed about equal to that of a person walking. The passenger killed was talking with another passenger, and failed to look and listen for the approach of a train. Had he looked when within seven or eight feet of the track he must have seen an approaching train, and had he listened he must have heard its bell, which was ringing, and the rumbling and other noises of the train, which was approaching at an illegal speed. The automobile was not stopped, and the deceased did not warn the driver. The Maine Supreme Judicial Court held that the deceased was guilty of contributory negligence, and a motion to set aside a verdict for the plaintiff and for a new trial was granted.—Blanchard v. Maine Central (Me.), 100 Atl., 666.

Hours of Service Act—Unforeseen Cause of Delay

Action was brought against the Missouri, Oklahoma & Gulf for a violation of the Hours of Service Act. Freight train No. 302 left Allen, Okla., at 3:30 p. m., on November 15, 1915, and the trainmen were relieved of duty at Denison at 11:15 a. m. on November 16, having been on duty more than 16 hours. The run was 96 miles. The cause of the delay was the derailment of another train, No. 56, at Wapanucka three hours after No. 302 left Allen, completely blocking the passage of No. 302. After the derailment the railroad exerted every effort to clear the track. The track was cleared at 4 a. m. November 16, 13 hours after the men on 302 went on duty, and 12½ hours after they left Allen. The Federal district court for the eastern district of Texas held that the derailment, which did not result from the railroad's negligence, was a cause not known to the carrier or its agents, which could not have been foreseen, and which relieved the carrier from liability under the act. The carrier was not required to relieve the train crew at the first convenient stopping place reached after the expiration of the 16-hour period, but could permit the men to continue to the end of the run.—United States v. M. O. & G., 241 Fed., 302. Decided January 10, 1917.

Stop, Look and Listen Rule—New York

In an action for the death of the driver of an automobile at a crossing, counsel for the railroad urged that (a) the view in the direction of the train was open to the deceased when the car was 31 feet from the track; (b) the better rule of law is that an auto approaching such a grade crossing should stop even if the driver cannot see. The New York Appellate Division said: "As to the duty to stop before going on the crossing, Justice Morschauser gave full instructions regarding what the jury might find was the decedent's duty, but said that the law did not make it always mandatory to stop at such a crossing. Federal decisions (Bremner v. Pennsylvania, 179 Fed. 577, 29 L. R. A. [N. S.] 924) and those of Massachusetts (Chase v. N. Y. Central, 208 Mass. 137, 94 N. E. 377), hold that an auto should be stopped before reaching such a crossing. That strictness, however, has not yet been held in this state. We are not at liberty to lay it down here. Hence no error appeared in thus submitting this question to the jury." Judgment for the plaintiff was affirmed.—Brooks v. Erie, 164 N. Y. Supp., 104. Decided March 23, 1917.

UNITED STATES SUPREME COURT

State Assessment of Railroad Franchises

The Louisville & Nashville and the State Board of Valuation of Kentucky both appealed from a final decree of the Federal district court for the Eastern District of Kentucky in a case in which the railroad sought to enjoin the enforcement of state and local taxes upon the basis of an assessment of the "franchise" of the company for 1913, made by the board at $45,658,630, or upon the basis of any greater valuation than $22,899,200. The district court found $25,808,493 to be the amount at which the company was legally taxable (230 Fed., 191). The company complained that it had been subjected to illegal discrimination, in that its property had been assessed at more than its actual value, whereas the property of all other taxpayers in the state was assessed uniformly and intentionally at much less than actual value; in fact at not exceeding 60 per cent thereof. This point the district court decided in favor of the railroad, and the Supreme Court of the United States agrees that the evidence showed that other property in the state was systematically under-valued, and that there was undue discrimination in the taxation.

The court said that under the Kentucky taxing statute there are three principal steps in the process of ascertaining the value of the intangible property, taxable in Kentucky, of companies operating lines extending within and beyond the limits of the state. These are: (1) The fixing of the value of "the capital stock of the corporation," which, as construed in previous cases, means the total value of all its net assets, tangible and intangible, within and without the state; (2) the apportionment to Kentucky, and (3) the elimination of the value of the tangible assets. Whether the second step should precede the third, or vice versa, was one of the matters in dispute. The board's second step, after fixing the value of the capital stock, was to apportion to Kentucky a certain part of this total value, which of course included both tangible and intangible assets; after which it proceeded to deduct the assessed value of the tangible assets in Kentucky. The railroad insisted that these steps should have been reversed; that the board, having valued the total capital stock of the company, including assets tangible and intangible, should first have deducted the entire tangible assets wherever situated, and next have appropriated a proper portion of the intangible to Kentucky. The court sustained the railroad's contention, and reversed the decree as far as the company's assignments of error were concerned, and affirmed it so far as the state's assignments of error were concerned. Justices Holmes, Brandes and Clarke dissented.—Louisville & Nashville v. Greene. Decided June 11, 1917. This case controls the cognate cases of Greene v. Louisville & Interurban and Illinois Central v. Greene, heard at the same time and decided on the same day.

Equipment and Supplies

LOCOMOTIVES

LINDE BROTHERS (Jamaica) have ordered one 0-4-2 type locomotive from the Baldwin Locomotive Works.

THE KANSAS CITY SOUTHERN has ordered 7 Mallet type locomotives from the American Locomotive Company.

THE CENTRAL ALGODONES (Cuba) has ordered 2 Consolidation locomotives from the Baldwin Locomotive Works.

THE RUSSIAN GOVERNMENT is reported as having ordered 400 narrow gage locomotives from the American Locomotive Company.

THE PHILADELPHIA SUBURBAN GAS & ELECTRIC COMPANY has ordered one four-wheel locomotive from the Baldwin Locomotive Works.

THE TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS has ordered 10 six-wheel switching locomotives from the American Locomotive Company.

THE CHICAGO & ALTON, reported in the *Railway Age Gazette* of May 25 as contemplating the purchase of locomotives, has ordered 10 Mikado locomotives from the Baldwin Locomotive Works.

THE RHODESIAN RAILWAY has ordered 6 Mountain type locomotives from the American Locomotive Company. These locomotives will have 22 by 24 in. cylinders, a total weight in working order of 172,000 lb., and will be equipped with superheaters.

THE TRINIDAD SHIPPING & TRADING COMPANY has ordered one four-wheel connected locomotive from the American Locomotive Company. This locomotive will have 9 by 14 in. cylinders and a total weight in working order of 34,000 lb.

THE DETROIT & TOLEDO SHORE LINE has ordered 2 superheater eight-wheel switching locomotives from the American Locomotive Company. These locomotives will have 22 by 28-in. cylinders, and a total weight in working order of 204,000 lb.

THE SOROCOBANA RAILROAD (Brazil) has ordered 3 Mikado and 5 Pacific type locomotives from the American Locomotive Company. The Mikado locomotives will have 19 by 20 in. cylinders, and a total weight in working order of 134,000 lb. The Pacific type locomotives will have 17½ by 20 in. cylinders, and a total weight in working order of 118,000 lb. All the locomotives will be equipped with superheaters.

FREIGHT CARS

THE GRAND TRUNK is in the market for 1,000 box cars.

THE MISSOURI PACIFIC will build 500 box cars in its own shops.

THE EL PASO & SOUTHWESTERN is in the market for 250 fifty-ton gondola cars.

PHELPS, DODGE & CO., New York, are reported in the market for 75 coke cars.

THE UNION PACIFIC is reported as preparing specifications for 4,000 freight cars.

THE CHESAPEAKE & OHIO is reported in the market for 1,000 70-ton hopper cars.

THE ERIE has ordered 50 center constructions from the Pressed Steel Car Company.

THE UNITED VERDE EXTENSION RAILROAD is in the market for 30 narrow-gage hopper cars.

THE COPPER RANGE has ordered 50 ore cars from the American Car & Foundry Company.

THE AURORA, ELGIN & CHICAGO (Electric) is in the market for 50 pit cars of 2-ton capacity.

THE ALIQUIPPA & SOUTHERN has ordered 50 gondola cars from the Pressed Steel Car Company.

THE CHICAGO & NORTH WESTERN is in the market for 375 center constructions for gondola cars.

SWIFT & CO. has ordered 25 6,000-gal. capacity tank cars from the Standard Steel Tank Company.

THE MARK MANUFACTURING COMPANY, Chicago, is in the market for 18, 50 to 70-ton, steel gondola cars.

THE CANADIAN GOVERNMENT RAILWAYS have ordered 5,000 freight cars from the Canadian Car & Foundry Company.

THE EVANS THWING REFINING COMPANY has ordered 30 8,000-gal. tank cars from the American Car & Foundry Company.

THE RICHMOND, FREDERICKSBURG & POTOMAC is reported in the market for 15 caboose cars and 15 steel underframes for 50-ton flat cars.

THE PHILIPPINE VEGETABLE OIL COMPANY has ordered 100 8,000-gal. capacity tank cars from the American Car & Foundry Company.

THE UNION RAILROAD is reported as having ordered 1,000 steel hopper cars from the Greenville Steel Car Company. This item has not been confirmed.

THE CARNEGIE STEEL COMPANY has ordered 60 fifty-ton tank cars from the American Car & Foundry Company and is reported in the market for 6 gondola cars.

THE UNITED STATES NAVY has ordered 11 fifty-ton steel flat cars, 2 thirty-ton box cars and 5 fifty-ton steel underframe box cars from the American Car & Foundry Company.

THE BETHLEHEM STEEL COMPANY, reported in the *Railway Age Gazette* of May 4 as being in the market for 50 55-ton gondola cars, has ordered these cars from the American Car & Foundry Company.

THE ISLAND PETROLEUM COMPANY, reported in the *Railway Age Gazette* of April 6 as inquiring for 25 tank cars, has ordered 15 8,000-gal. capacity tank cars from the American Car & Foundry Company.

PASSENGER CARS

THE MONTANA, WYOMING & SOUTHERN has ordered a 200-horsepower 55-ft. McKeen motor car from the McKeen Motor Car Company.

THE UNION PACIFIC has ordered a 300-horsepower 70 ft. McKeen mail, express and baggage car from the McKeen Motor Car Company.

IRON AND STEEL

THE MISSOURI PACIFIC has ordered 100 tons of steel from the American Bridge Company for 101-foot track girder span.

MACHINERY AND TOOLS

THE CHICAGO & NORTH WESTERN has asked for bids on a list of machine tools, including engine lathes, axle lathes, wheel lathes, turret lathes, horizontal and vertical boring mills, planers, shapers, drill presses, punches, shears, forging presses, grinders, hammers, portable boring and facing machines, crank pin turners, flaying presses and clamps, forging machines, spring bending and stripping machines, hack saws and wheel presses.

RAILWAY EXPORTS TO RUSSIA.—A compilation by the National City Bank of New York shows that the total exports to Russia in the past three years will aggregate nearly $1,000,000,000, while the aggregate of the fifty years preceding was but a little over $500,000,000. The United States Government figures of the exports to Russia in 1915 were $61,000,000; in 1916, $314,000,000, and in the fiscal year ending June 30, 1917, will approximate $565,000,000. Of the total for 1916 railway cars amounted to over $18,000,000; locomotives about $12,000,000, and steel rails and other track material about $12,000,000. The figures for 1917 are not yet available.

Supply Trade News

The Mahr Manufacturing Company, Minneapolis, Minn., has opened an office at 120 Liberty street, New York, in charge of J. R. Matthews.

The Barco Brass & Joint Company, Chicago, announces a change in the company name to the Barco Manufacturing Company, effective July 1.

R. C. Acers, western sales manager for the Engineer Company, has been elected vice-president, with offices in the McCormick building, Chicago.

W. W. Hall, formerly Pittsburgh sales manager of the Republic Iron & Steel Company, has been appointed assistant general manager of the Columbia Steel & Shafting Company, Pittsburgh, Pa.

H. G. Doran & Co., Peoples Gas building, Chicago, has been incorporated to buy and sell mechanical and other devices, with a capitalization of $10,000. Harry G. Doran, president; A. D. Cloud, secretary.

Karl W. Bock, formerly secretary and assistant to the vice-president of the Union Pacific Coal Company, Omaha, Neb., has been appointed manager of the Walter A. Zelnicker Supply Company, St. Louis, Mo.

The Ryan Car Company has started to employ women workers in its works at Hegewisch, Ill., in order to overcome the shortage of labor, and on June 25 five women were put to work doing light manual labor such as handling lumber, sorting light material, etc.

The Dakin Emergency Safety Brake Company, Indianapolis, Ind., has been incorporated with a capital stock of $50,000, to manufacture safety brakes and other devices. G. E. Dakin, M. A. Dakin and Samuel Dakin, all of Stanton, Mich., are directors of the corporation.

The duties of R. N. Parks, former general manager of the Bettendorf Company, whose resignation was announced in the *Railway Age Gazette* on June 8, will be assumed by J. W. Bettendorf, president and treasurer, and J. H. Bendixen, second vice-president and manager of sales.

George C. Isbester, of the Rail Joint Company, Chicago, has been appointed paymaster in the United States Navy, with the commission of lieutenant commander. He has been relieved of his duties with the Rail Joint Company, and is now located in the Edison building, Chicago.

Marshall Williams, operating manager of the Pittsburgh division plants of the American Bridge Company, has been appointed assistant to the president, with headquarters at Pittsburgh, Pa. George W. Hunter, manager of the Gary (Ind.) plant, succeeds Mr. Williams. P. W. Seil succeeds Mr Hunter as manager of the Gary works.

Ralph E. Graves, Pittsburgh representative of the Cleveland Punch & Shear Works Company, Cleveland, Ohio, has been placed in charge of the new office opened by that concern in the McCormick building, Chicago, and will have charge of the middle western territory. T. J. McNamara succeeds Mr. Graves as manager of the Pittsburgh office.

Thomas M. Derickson, sales manager of the A. G. A. Railway Light & Signal Company, Elizabeth, N. J., died on June 18 from blood poisoning. Mr. Derickson had held this position since July 1 last year. He was born at Meadville, Pa., in 1866. He served his apprenticeship in the Erie shops at Meadville, but later studied civil engineering, and for a while was in the engineering department of the Erie Railroad. Subsequently, he engaged in railroad and land surveying in the south, and at one time was also general manager of the Lookout Incline Railway on Lookout Mountain. He was later sales manager of the Champion Iron Works, and subsequently became general manager of the Memphis district of the Bell Telephone Company, and then general sales manager of the Galion Iron Works, Galion, Ohio. He later became general manager of the F. B. Zieg Manufacturing Company, Frederickstown, Ohio, manufacturers of cast iron culvert pipe and the Panama line of road machinery.

At separate meetings of the stockholders of the Westinghouse Electric & Manufacturing Company, and the Westinghouse Machine Company, held at the offices of the respective companies at East Pittsburgh on June 13, favorable votes were taken on the merger of the two companies and the officers and directors were empowered to arrange for the merger.

Tuco Products Corporation

The Tuco Products Corporation has recently been organized under the laws of New York, with a capital of $500,000, and has purchased the entire business of the Transportation Utilities Company, of New York, and the Magnesite Products Company, of San Francisco. The former company has been engaged in business with the railroads for more than ten years, handling the "Tuco" brand of insulation and preservation; National car roofing; National and Universal trap doors; Imperial and Universal car screens; Eclipse deck sash ratchets; Perfection sash balances, and Kicker and Wedge locks for trap doors; Flexolith composition flooring; Resisto insulation; Tucolith plastic car flooring; Tucork insulation; Brown weatherstrips; the North Pole drinking fountain; pulverized magnesite and chloride magnesium. The Magnesite Products Company has been established for several years, manufacturing "Klingstone" flooring, magnesite, stucco, plaster and paint.

D. W. Pye

Magnesite is one of the principal materials used in the manufacture of Tucolith plaster car floorings, and the only known suitable supply (low in lime content) heretofore came from the Balkan states. That source being shut off by the war, forced the company to make a search for the right raw material, and after exhaustive laboratory tests and resulting negotiations, the consolidation mentioned was effected, which assures a convenient and apparently unlimited supply. It also makes possible an expansion of the business, by which it is planned to deal with the application of stucco to old wooden passenger stations. The development of Klingstone stucco, in which the binder employed is made from a by-product of magnesite, is such that the company guarantees it against checking, cracking or falling off—one of the objections frequently to this method of construction. There will also be added a complete line of fireproof wall board, plaster and paints. Arrangements have been practically made for 16 branch agencies to handle the business in different sections of the United States and Canada.

David H. McConnell has been elected chairman of the board. Mr. McConnell has been identified with many large business interests in which his financial genius and business foresight have been a factor in their success. He is at the present time at the head of a large manufacturing business which employs thousands of agents, and is also a director in a number of railway supply companies.

David W. Pye, president of the corporation, is well known in the railway supply field. For 21 years he was connected with the Safety Car Heating & Lighting Company, which company he joined on September 1, 1889, as assistant to the treasurer. Later he was made purchasing agent, and still later made assistant to the president, then second vice-president, and finally vice-president. In 1910 he left that company to become president of the United States Light & Heating Company, and two years later was elected president of the Transportation Utilities Company. Mr. Pye has spent his entire business career of 27 years with large concerns specializing on railway requirements.

Garrett Burgert, vice-president and treasurer, was for 27 years with the Ramapo Iron Works, for the first 10 years as superintendent, and the remaining 17 years as sales manager. He was then elected president of the Metal Plated Car & Lumber Company, in which capacity he served for 8 years, or until 1912, when that company was absorbed by the Transportation Utilities Company. He was then made secretary, and in 1916 was elected vice-president.

Harold B. Chamberlain will have direct charge of the railroad sales department. After Mr. Chamberlain left college he spent several years in the mechanical and car departments of the Baltimore & Ohio. He left railway service to accept an appointment in the mechanical department of the Safety Car Heating & Lighting Company. Later he went with the Transportation Utilities Company, and after several months in the plant was assigned to the selling staff.

W. V. V. Clarke has been appointed engineer of plants. Mr. Clarke, a Cornell graduate, has been especially educated in engineering and chemistry. He has for the last few years had charge of certain gas interests in Brooklyn, and will have direct charge of the San Francisco, Chicago and New York plants.

Locomotive Stoker Company

The Locomotive Stoker Company announces the appointments of W. G. Clark as general sales manager, with headquarters at Pittsburgh; F. L. Wassell as western sales manager, with headquarters in the Railway Exchange building, Chicago, and O. B. Capps as eastern sales manager, with headquarters at 50 Church street, New York.

W. G. Clark

W. G. Clark, prior to his appointment as general sales manager, held the position of western manager of the company. He graduated from Columbia University in 1899 and at once entered the mechanical engineering department of the Metropolitan Street Railway Company in New York. In 1902, he became connected with the Westinghouse interests by entering the engineering department of the Westinghouse Electric & Manufacturing Company at East Pittsburgh. He then went to the Westinghouse Air Brake Company as inspector, and later was representative at St. Louis, Mo. In 1905, he was appointed western manager of Westinghouse, Church, Kerr & Co., which position he left to become western manager of the Locomotive Stoker Company, with headquarters at Chicago.

F. L. Wassell

F. L. Wassell, who has been appointed western sales manager, was formerly secretary of the company. Mr. Wassell became associated with the Westinghouse interests in 1910, when he entered the employ of the Westinghouse Air Brake Company at Wilmerding, Pa., as private secretary. He later became assistant secretary of this company. In 1913 he was made secretary of the Locomotive Stoker Company, but it was not until the summer of 1916 that he became actively connected with the Stoker company as its secretary at Pittsburgh.

O. B. Capps, who has been appointed to the position of eastern sales manager, was formerly eastern representative. Mr. Capps started work in the mechanical engineering department of the American Locomotive Company at Schenectady, N. Y. In 1909, he left the Locomotive company to enter the employ of the Locomotive Stoker Company as mechanical expert at Schenectady. In the summer of 1915, he took up the sales work as eastern representative, with headquarters at 50 Church street, New York City, which position he now leaves to become eastern sales manager, as above noted.

O. B. Capps

Decision on Wolhaupter Tie Plate Patent

The United States Supreme Court handed down a decision on May 21 in a case brought by the Railroad Supply Company, Chicago, against the Elyria Iron and Steel Company, Elyria, Ohio, for infringement of certain claims in patents for tie plates granted to B. Wolhaupter and since acquired by the Railroad Supply Company, that the tie plate manufactured and sold by the Elyria Iron and Steel Company did not infringe on these patents, thereby affirming the decree of the Circuit Court of Appeals for the Sixth District. In this decision the Court called attention to the fact that the first patent for a tie plate "was issued in 1881 and between that date and the date of issuing the first patent in suit to Wolhaupter in 1895, 26 patents were issued and that in the 7 years between 1895 and 1902 when Wolhaupter's second patent in suit was issued, 19 more patents were issued for various forms of this simple device." The court further stated that the slight variations claimed for the patents in suit from the tie plates which had been designed previously did not constitute a patentable invention.

An identical suit was brought by the Railroad Supply Company, Chicago, against the Hart Steel Company, Elyria, O., and Guilford S. Wood, Chicago, selling agent for the Elyria company and its manager in the Circuit Court of the District of Northern Illinois on December 9, 1908, and a decision was rendered for the defendants on December 18, 1911. This case was appealed by the plaintiff to the Circuit Court of Appeals of the Seventh District, which rendered a decision on January 5, 1915, reversing the decision of the lower court. The case was then appealed by the defendants to the United States Supreme Court, which gave a decision for the defendants on May 21, the same date that the decision was rendered on the parallel case against the Elyria Iron and Steel Company.

On June 11, the Supreme Court entered an order granting counsel for the Railroad Supply Company leave to file a petition for a rehearing within 60 days.

Red Cross Dividends

A number of large companies selling to the railroads followed the lead of the Steel Corporation last week and declared extra dividends for the Red Cross. The dividend checks in each case have been sent to the stockholders with the suggestion that the proceeds be given to the American National Red Cross for the $100,000,000 fund which that organization is raising. A list of the companies in the railway supply field that have declared such extra Red Cross dividends follows:

Company	Dividend	Amount
American Brake Shoe Company	.....	$50,000
American Locomotive Company	1 per cent com.	250,000
General Electric Company	1 per cent	1,000,000
Pantasote Leather Company	.....	5,000
U. S. Steel Corporation	1 per cent com.	5,083,028
Westinghouse Elec. & Mfg. Company	1 per cent com. and pref.	375,000

Westinghouse Electric & Manufacturing Company Elects New Officers

At the meeting of the board of directors of the Westinghouse Electric & Manufacturing Company, held at New York, June 20, the board, in addition to declaring a regular quarterly dividend of 1¾ per cent on both preferred and common stock, also declared an extra dividend of ¼ of 1 per cent on both common and preferred stock, amounting to $375,000 for the benefit of the Red Cross.

The following officers were elected: Guy E. Tripp, chairman of the board; E. M. Herr, president; L. A. Osborne, Charles A. Terry, H. P. Davis, H. D. Shute, H. T. Herr, and Walter Cary, vice-presidents; T. P. Gaylord, acting vice-president; James C. Bennett, controller and secretary; Warren H. Jones, assistant secretary; H. F. Baetz, treasurer and assistant secretary; S. H. Anderson, assistant treasurer and assistant secretary; L. W. Lyons, assistant treasurer; F. E. Craig, auditor; W. B. Covil, Jr., and W. J. Patterson, assistant auditors.

H. D. Shute

Henry D. Shute, who has been promoted from treasurer to vice-president of the Westinghouse Electric & Manufacturing Company, has been associated with the company since 1893. Mr. Shute was born in Somerville, Mass. He graduated in electrical engineering at the Massachusetts Institute of Technology in 1892. He later spent some time studying in Germany at the School of Mines in Clausthal, and also at the Technical School in Dresden. Mr. Shute has had a wide experience in the Westinghouse company. His first two years were spent in the testing department, and later he was engaged on erection and laboratory work. He subsequently became associated with L. B. Stillwell. For a short time afterwards he was an assistant foreman of the experimental department in the Niagara Falls Power Works. Later he was transferred to the engineering department, where he designed alternating current apparatus, being prominently identified with the steam railroad electrification work done by the Westinghouse company. After five years' service with the company, Mr. Shute took up work in the sales department, in which he remained until 1903 when he was made assistant to the vice-president, L. A. Osborne, which position he filled until 1910, when he was elected acting vice-president. In 1914, Mr. Shute was made treasurer of the company, succeeding T. W. Siemon.

H. T. Herr

Herbert Thacker Herr, who has been elected a vice-president of the Westinghouse Electric & Manufacturing Company, has been identified with the Westinghouse Machine Company since 1908, filling, respectively, the positions of general manager, second vice-president and general manager, and, finally, vice-president and general manager and a director of the company. Mr. Herr was born in Denver, Colo., and received his education in the public schools of Denver and at Yale University. After leaving college he became identified with the following railroads, in various capacities: Chicago & North Western, Denver & Rio Grande, Chicago, Great Western, Atchison, Topeka and Sante Fé, and the Norfolk & Western. In 1906 Mr. Herr was made general superintendent of the Denver & Rio Grande, and two years later retired from the railway field to become vice-president and general manager of the Duquesne Mining & Reduction Company, at Duquesne, Ariz., where he remained until he moved to Pittsburgh. Mr. Herr is officially connected with a number of other industrial and financial institutions, being a director of the Pittsburgh Meter Company, vice-president and director of the Westinghouse Air Spring Company, and the Westinghouse Gear and Dynamometer Company, and the Rodman Chemical Company.

Walter Cary

Walter Cary, who has been elected a vice-president of the Westinghouse Electric & Manufacturing Company, was since 1904 associated with the Westinghouse Lamp Company, filling for the greater part of the time the positions of vice-president and general manager. Mr. Cary was born in Milwaukee, Wis., and received his education in the schools of that city, and at Harvard University. After leaving college he became associated with the Gibbs Electric Company, of Milwaukee, as secretary, and in 1889 he, with some other local men, formed the Milwaukee Electric Company, manufacturers of dynamos and motors, becoming its vice-president and in 1902 its president. Mr. Cary is well known throughout the electrical industry on account of his activities in the field of incandescent lighting.

H. F. Baetz, who has been elected treasurer of the Westinghouse Electric & Manufacturing Company, was born and raised in Pittsburgh, and educated in the schools of that city, graduating from Allegheny High School in the class of 1887. On the date of his election as treasurer, Mr. Baetz has just completed a day 30 years of service with the Westinghouse Electric & Manufacturing Company. Mr. Baetz began his business career as a timekeeper in the Garrison plant of the Westinghouse Electric & Manufacting Company, and after only one year of service, and at the age of 18, he was made paymaster of the company. Two years later he was transferred to the accounting department, where he worked until 1899, when he was made acting assistant treasurer. In 1902. Mr. Baetz was elected assistant treasurer of the company.

H. F. Baetz

TRADE PUBLICATIONS

THE BEST WAY OUT.—The Cleveland Twist Drill Company recently put on the market its Ezy-out screw extractors for removing broken set or cap screws, studs, staybolts, etc. The extractors have met with such success that the company has now also put on the market three additional sets, and in addition to the No. 17 set which was sold originally. These four sets, including 12 sizes of extractors, are described in a folder bearing the title, "The Best Way Out," recently issued by the company.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company will receive bids until noon, July 6, for grading, bridge work, tracklaying and surfacing, fencing and buildings, required for the construction of the Osage County & Santa Fe from Owen, Okla., to Fairfax.

CHICAGO & NORTH WESTERN.—This company will build an 80 ft. by 106 ft. tank shop of brick construction at Chicago, Ill. It will also build a roof 50 by 375 ft., over the space between the brass foundry and the locomotive and wheel shop. These improvements are in addition to those mentioned in the *Railway Age Gazette* of March 30. The total expenditure will be approximately $900,000.

This company is building a 35-stall roundhouse with steam power plant at Chase yards, South Milwaukee, Wis., to cost $350,000. The Walsh Construction Company, Davenport, Iowa, are the contractors.

ETTRICK & NORTHERN.—The stockholders of this company have voted a bond issue of $50,000 to complete a line between Ettrick, Wis., and Blair, four miles of which have been graded and the bridges built. The road will be placed in operation next fall. All the rails and other track material, but no equipment, have been purchased.

MIAMI MINERAL BELT.—This company is constructing a line from Quapaw, Okla., via Century, Cordon and Picher, to Baxter Springs, Kan., 20 miles. The maximum grade of the road is 1 per cent, and the maximum curvature 6 deg. There will be approximately 7,000 cu. yd. of grading per mile. The contract for construction has been let to the Hedges & Allhands Construction Company, Springfield, Mo. The work is now about 50 per cent complete. It is the intention of this line to serve the Miami lead and zinc district with a railroad connecting with the St. Louis-San Francisco at Quapaw. J. A. Frates, Jr., Miami, Okla., is vice-president and general manager; J. H. Grant, Oklahoma City, is secretary.

PENNSYLVANIA RAILROAD.—This company has awarded contracts to the Matthews Construction Company, Princeton, N. J., for the construction of a passenger station, a baggage and Adams Express building and a freight station, all to be erected at Princeton, N. J.

PRESCOTT & PHOENIX SHORT LINE.—This company is making final surveys for a line from Turkey, Ariz., to Glendale, a distance of 70 miles. R. E. Sloan, 406 Fleming building, Phoenix, is secretary and treasurer.

ST. LOUIS-SAN FRANCISCO.—This company has let a contract to Charles Cunliff, St. Louis, Mo., for the construction of an extension to a freight house at Tulsa, Okla. The building will be 40 ft. by 330 ft. and will cost approximately $100,000. Other improvements involving the laying of additional tracks are being contemplated.

SAND SPRINGS RAILWAY.—This company contemplates the extension of its road from Tulsa, Okla., to a point connecting with the Osage County & Santa Fe, near Pawhuska, a distance of approximately 45 miles. It is not expected that construction will be started for some time.

SOUTHERN PACIFIC.—This company in conjunction with P. A. Haviland, engineer of Alameda county, Cal., has completed preliminary plans for a new $1,500,000 bridge between Oakland and Alameda. The structure will be of the double leaf bascule type and will supplant the two draw bridges now doing service at Webster and Harrison streets, Alameda. The detailed plans will be prepared immediately and the actual construction will be started as soon as possible.

WESTERN PACIFIC.—This road has awarded a contract to the Utah Construction Company, Ogden, Utah, for the construction of a line from Reno, Nev., to Chilkoot, Cal., 35 miles. The work will involve the building of about 18 miles of new line, and the widening of the present narrow gage for the balance of the distance.

Railway Financial News

BALTIMORE & OHIO.—Kuhn, Loeb & Co. and Speyer & Co. are offering $15,000,000 of Baltimore & Ohio Railroad Company 5 per cent gold notes, one-half of the issue maturing in one year, and the other half in two years. Both issues of notes are being offered at 98¾, yielding an average for the two issues of approximately 5.78 per cent.

CARTHAGE & COPENHAGEN.—Bondholders of this road have petitioned Justice E. C. Emerson, of Watertown, N. Y., for resale of the property. On May 29 this 9-mile line extending from Carthage, N. Y., to Copenhagen was sold to Hurwitz Brothers, of Syracuse. The bondholders allege fraud in connection with the sale, and that the price paid was inadequate. Judge L. P. Hale, counsel for the New York Public Service Commission, Second District, showed letters to the court indicating that the commission did not favor junking of a railroad if it could be reorganized. The motion for a resale was granted on condition that the bondholders deposit with the referee $250 to secure the cost of sale and to pay Hurwitz Brothers' interest on their deposit of $2,700 for the property until the time of the resale.

CHICAGO & EASTERN ILLINOIS.—Judge Carpenter in the U. S. District Court at Chicago has decided that the bonds of the Chicago & Indiana Coal Railway were a lien only on the coal road, and that such was the meaning of the consolidation agreement in 1894. This ruling of the court makes the bondholders of the Chicago & Indiana Coal Railway general creditors of the Chicago & Eastern Illinois. It is expected that this decision will clear the way for the Chicago & Eastern Illinois reorganization.

CHICAGO, ROCK ISLAND & PACIFIC.—Stockholders at a special meeting approved the reorganization plan as signed by Judge Carpenter of the Federal Court, with no opposition to any part of it except by Wallace Streeter, a Chicago attorney holding proxies for 30 shares for Clarence H. Venner, of New York, who objected to the entire procedure as being illegal.

DENVER & RIO GRANDE.—An appeal has been filed in the U. S. Circuit Court of Appeals by Chadbourne & Shores, New York, attorneys for this company, from the judgment for more than $38.000,000 given by Judge Hand in the U. S. District Court in favor of the Equitable Trust Company.

DELAWARE & HUDSON.—Application of Samuel Halperin for an injunction to restrain this company from distributing a quarterly dividend of 2¼ per cent on its capital stock, has been denied by Justice Tierney, of the New York Supreme Court. Halperin contended that the road was not in a financial condition to pay the dividend out of its profits. The company showed the court that the dividend is warranted because the road's current assets are $35,548,622, and its current liabilities only $10,722,808. The dividend of 9 per cent for the present year is based on net earnings for 1916 of $4,158,372, or at the rate of 9.78 per cent. In his decision Justice Tierney said: "The motion which is addressed to the discretion of the court has nothing to commend it either in form or substance, and is denied."

PENNSYLVANIA RAILROAD.—Directors of the Pennsylvania Company operating the western lines of the Pennsylvania Railroad system have declared a dividend of 3 per cent. The dividend is payable June 30 to stock of record June 25. Six months ago 4 per cent was declared, making 8 per cent in 1916.

PITTSBURGH, CINCINNATI, CHICAGO & ST. LOUIS.—This company has declared a dividend of 2½ per cent, payable August 30. This is the first dividend of the new Panhandle company which absorbed several western lines in the Pennsylvania Railroad system.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—This company has applied to the Missouri Public Service Commission for authority to issue $883,000 of bonds under its general mortgage to pay for additional trackage.

Railway Officers

Executive, Financial, Legal and Accounting

W. M. Jeffers, general manager of the Union Pacific, has been appointed also a vice-president of the company; office at Omaha, Neb.

Martin Post Blauvelt, controller of the Illinois Central, at Chicago, resigned, effective July 1, to become controller of the Lehigh Valley, with headquarters at New York. He was born at Suffern, Rockland county, N. Y., on February 25, 1865. He entered railway service in 1885 as a clerk in the freight office of the Delaware, Lackawanna & Western, at Hoboken, N. J. On October 6, 1887, he went with the New York, Lake Erie & Western, now the Erie, as a clerk in the office of the auditor of traffic. On February 1, 1891, he was promoted to clerk in the office of the third vice-president and auditor. In January, 1893, he was appointed general bookkeeper, and from February, 1896, to February 8, 1910, was consecutively chief clerk in the accounting department, assistant auditor, auditor and controller. On the latter date he was appointed controller of the Illionis Central, which position he held until his resignation, as above noted.

M. P. Blauvelt

Edwin Yates Quinn, who has been appointed auditor of the Florida East Coast, with headquarters at St. Augustine, Fla., as has already been announced in these columns, was born on November 9, 1887, at Holly Springs, Miss., and graduated from high school in June, 1905. He entered the service of the Illinois Central on June 15, 1905, as a messenger in the local freight office at Memphis, Tenn. He served in various capacities until October, 1906, and subsequently served in the local freight offices of various lines in St. Louis and Chicago until January 1, 1910, when he went to the Missouri Kansas & Texas Railway as assistant bookkeeper, in the controller's office, at St. Louis, Mo. He was later promoted to chief clerk of disbursements, and in July, 1914, went to the Florida East Coast as special accountant. In January, 1915, he was promoted to chief clerk to general auditor, and in April, 1917, was appointed assistant auditor, which position he held until his appointment on June 1 as auditor of the same road, as above noted.

E. Y. Quinn

William G. Vollmer, whose appointment as assistant to president of the Missouri Pacific, with headquarters at St. Louis, Mo., was announced in the *Railway Age Gazette* on June 8, entered railway service with the Pittsburgh, Cincinnati, Chicago & St. Louis on May 10, 1901, in the operating department. Later he was in the employ of the Baltimore & Ohio at Baltimore, Md., and the Chicago, Rock Island & Pacific, at Chicago, Ill. In November, 1905, he went with the Missouri Pacific in the office of the engineer maintenance of way at Little Rock, Ark. Later he was employed consecutively in the offices of the chief engineer maintenance of way, chief engineer, general manager, vice-president in charge of operation and construction, and on June 1 was appointed assistant to president.

Operating

B. H. Hammer has been appointed trainmaster on the Fargo division of the Northern Pacific, with headquarters at Dilworth, Minn.

A. L. Bergfeld has been appointed assistant general superintendent of transportation of the Great Northern, with headquarters at St. Paul, Minn., effective June 22.

J. C. Roth, trainmaster on the Northern Pacific, at Pasco, Wash., has been appointed assistant to the general superintendent, with headquarters at Tacoma, effective June 5.

C. I. Leiper, whose appointment as superintendent of the New York division of the Pennsylvania Railroad, with headquarters at Jersey City, N. J., has already been announced in these columns, was born in Wallingford, Pa., on October 28, 1874. He graduated from Swarthmore College in 1895, after which he took a special course at the University of Pennsylvania. In 1897 he entered the service of the Pennsylvania Railroad in the construction department. He went to Altoona as transitman in February, 1901, and the following March was made assistant supervisor on the Maryland division. He was promoted to supervisor on the same division in 1903, later serving as supervisor on the Pittsburgh division and the New York division. In August, 1909, he was appointed division engineer of the Manhattan division, and in 1911 he went to the New York division in the same capacity. He was made principal assistant engineer of the Philadelphia, Baltimore & Washington on June 16, 1913, and the following February was appointed superintendent of the New York, Philadelphia & Norfolk, at Cape Charles, Va., from which position he was promoted on June 16 to superintendent of the New York division of the Pennsylvania Railroad, as above noted.

C. I. Leiper

E. F. Blomeyer has been appointed general manager of the Ann Arbor and the Manistique & Lake Superior in charge of the operating and traffic departments, with headquarters at Toledo, Ohio.

Albert De Bernardi, general superintendent of the Nebraska-Kansas lines of the Missouri Pacific, at Kansas City, Mo., has been appointed general maanger of the Kansas City, Mexico & Orient.

E. J. Weber, chief clerk to president and general manager of the Maryland & Pennsylvania, has been appointed also car accountant, with office at Baltimore, Md., vice K. O. Munroe, resigned.

H. B. Grimshaw, superintendent of the Georgia division of the Seaboard Air Line at Atlanta, Ga., has been appointed to the new position of general superintendent, with office at Savannah.

L. C. Ayers, assistant superintendent of the Norfolk & Western at Bluefield, W. Va., has been appointed assistant superintendent, Norfolk division, in charge of maintenance of way and struc-

tures, with office at Crewe, Va., and R. H. Smith has been appointed assistant superintendent, Pocahontas division, with office at Bluefield, W. Va., vice Mr. Ayers.

A. H. Webb, superintendent of the Missouri Pacific at Wichita, Kan., has been appointed general superintendent of the Western district, with headquarters at Kansas City, Mo., vice A. De Bernardi, resigned to accept service with another company. E. C. Wills, superintendent at Atchison, Kan., succeeds Mr. Webb, and R. E. Cahill, assistant superintendent at Concordia, succeeds Mr. Wills.

J. H. Williams, trainmaster of the Central of Georgia at Cedartown, Ga., has been appointed assistant superintendent, with headquarters at Chattanooga, Tenn., with jurisdiction over maintenance of way and structures, maintenance of equipment, and transportation service between Chattanooga, Tenn., and Chickamauga, Ga., and F. D. Barnes has been appointed trainmaster at Cedartown, Ga., vice Mr. Williams.

Martin W. Clement, who has been appointed superintendent of the New York, Philadelphia & Norfolk, with headquarters at Cape Charles, Va., as has already been announced in these columns, was born on December 5, 1881, at Sunbury, Pa., and graduated from Trinity College, Hartford, Conn. He entered the service of the Pennsylvania Railroad on August 1, 1901, as a rodman on the New Jersey division, and on March 20, 1905, he was made transitman at Altoona, Pa. In August, 1905, he was promoted to assistant supervisor, and in January, 1910, became supervisor. On December 1, 1914, he was appointed division engineer of the New York, Philadelphia & Norfolk, and on August 8, 1916, was transferred to special duties at Jersey City, N. J., in connection with the improvements in and around New York. He was appointed division engineer in the office of the principal assistant engineer of the New Jersey division of the Pennsylvania Railroad on November 15, 1916, which position he held at the time of his recent appointment as superintendent of the New York, Philadelphia & Norfolk, with headquarters at Cape Charles, Va., as above noted.

M. W. Clement

S. T. Cantrell, superintendent of the Baltimore & Ohio at Philadelphia, Pa., having been granted leave of absence in order to tender his services to the government for railroad work in Russia, R. B. White, superintendent at Seymour, Ind., has been transferred to the Philadelphia division to fill the vacancy; R. B. Mann, superintendent at Flora, Ill., has been transferred to the Indiana division, succeeding Mr. White, and C. G. Stevens, tranmaster at Flora, has been promoted to superintendent of the Illinois division, with headquarters at Flora. Effective June 20.

H. E. Astley, who has been appointed superintendent of the Midland division of the New York, New Haven & Hartford, with headquarters at Boston, Mass., began railway work in May, 1889, as a rodman on the Pennsylvania Railroad. In 1894 he went to the engineering department of the New York, New Haven & Hartford, and subsequently served successively as assistant roadmaster, roadmaster and supervisor. In 1914 he was appointed division engineer on the Central New England, and also served on divisions of the New York, New Haven & Hartford until March, 1916, when he was appointed trainmaster of the Midland division of the New Haven, which position he held at the time of his recent appointment as superintendent of the same division, as above noted.

J. F. Gagnon, superintendent of maintenance of way of the Ft. Dodge, Des Moines & Southern, at Boone, Iowa, has been appointed superintendent of terminals, with headquarters at Ft. Dodge, succeeding J. A. Combs. Mr. Gagnon was born at Ft. Dodge on September 26, 1887. He entered railway service with the Minneapolis & St. Louis as a clerk in May, 1905, and in September of the same year entered the employ of the Illinois Central in the same capacity. From 1908 to 1910, he was with the Ft. Dodge, Des Moines & Southern, in train service, and in the latter year he was in similar service with the Chicago & North Western. In September, 1911, he returned to the Ft. Dodge, Des Moines & Southern, as a clerk in the maintenance department. In the five subsequent years he was train despatcher, trainmaster and superintendent of maintenance of way. On June 15 he was appointed superintendent of terminals, as above noted.

Robert Valentine Massey, who has been appointed general superintendent of the Eastern Pennsylvania division of the Pennsylvania Railroad, with headquarters at Altoona, Pa., as has already been announced in these columns, was born in Dover, Kent county, Del., on September 29, 1871. He graduated from the Sheffield Scientific School of Yale University in 1892, and in September of the same year entered the service of the Pennsylvania Railroad in the construction department, and remained in that department until August, 1895, when he was transferred to the maintenance of way department, in the office of the principal assistant engineer at Altoona. He was appointed assistant supervisor at Freeport, Pa., on November 1, 1895, and subsequently served in the same capacity at Baltimore, Md., on the Northern Central Railway, and at Mifflin, Pa., on the Pennsylvania Railroad. On August 1, 1900, he was promoted to supervisor of the Schuykill division, and later served in a similar capacity on the Maryland division of the Philadelphia, Baltimore & Washington, and at Pittsburgh Yard. In April, 1907, he was promoted to division engineer of the Schuykill division of the Pennsylvania Railroad. He was transferred to the New York division on January 1, 1909, and on March 7, 1911, was promoted to superintendent of the New York, Philadelphia & Norfolk. On February 11, 1914, he was appointed superintendent of the Manhattan division of the Pennsylvania Railroad, with headquarters in New York City, and on May 1, 1916, when the Manhattan and the New York divisions were consolidated, he was made superintendent of the new New York division, which position he held at the time of his recent appointment as general superintendent, as above noted.

R. V. Massey

Traffic

G. T. Stocks has been appointed commercial agent of the Central of Georgia, with office at Rome, Ga., vice S. E. Dusenbury, transferred.

Joseph P. Billups, general passenger agent of the Georgia Railroad, has been appointed passenger traffic manager, with office at Atlanta, Ga.

P. H. Lantz, chief clerk to vice-president of the Baltimore & Ohio, at Baltimore, Md., has been appointed commercial freight agent, with office at Philadelphia, Pa.

W. E. Stewart, commercial agent of the Central of Georgia at Chattanooga, Tenn., has been appointed division freight and passenger agent, with office at Chattanooga.

J. C. Conn, division passenger agent of the Southern Railway System at Chattanooga, Tenn., has been appointed general baggage agent, with headquarters at Chattanooga.

Joseph A. Higgins, assistant general passenger agent of the Atlanta & West Point and the Western of Alabama, has been appointed general passenger agent, with office at Atlanta, Ga.

J. H. Brinkman, traveling agent on the Great Northern, at Cincinnati, Ohio, has been appointed general agent, with the same headquarters, succeeding J. H. Carroll, Jr., resigned, effective June 11.

H. H. Melanson, whose appointment as passenger traffic manager of the Canadian Government Railways, with headquarters at Moncton, N. B., has already been announced in these columns, was born on March 9, 1872, at Scoudouc, N. B., and was educated at the University of St. Joseph's College, N. B. He began railway work on November 18, 1889, as a clerk in the mechanical department on the Intercolonial Railways of Canada, now a part of Canadian Government Railways. He was later transferred as clerk to the passenger department, and subsequently served as chief clerk. In March, 1901, he was appointed general baggage agent, and in 1903 served as chief clerk. He was appointed assistant general passenger agent in November, 1909, and was promoted in August, 1913, to general passenger agent, remaining in that position until his recent appointment as passenger traffic manager, as above noted.

H. H. Melanson

Edward A. Dye, traveling agent on the Chicago, St. Paul, Minneapolis & Omaha, at Vancouver, B. C., has been appointed general agent, with the same headquarters, effective June 16. The position of traveling agent at Vancouver is abolished.

James W. Graham, assistant general freight agent of the Toledo, St. Louis & Western, at Toledo, Ohio, has been appointed general freight agent, with the same headquarters, effective June 1. He was born in Toledo on March 21, 1879. He entered railway service on May 20, 1895, as office boy in the office of the receiver and general manager of the Toledo, St. Louis & Western. In November he was promoted to clerk in the general freight office and held various clerical positions until his appointment as contracting freight agent in January, 1906. On January 1, 1907, he became chief rate clerk, and when in 1908 the Clover Leaf and the Chicago & Alton were consolidated, he served both roads in this capacity at Chicago, Ill. From December, 1909, until February 10, 1910, he was chief clerk in the freight traffic department; on the latter date he was appointed chief of the tariff bureau in Chicago; seven months later he was promoted to assistant general freight agent ,and on September 1, 1912, upon the separation of the joint operation of the C. & A., and the T. St. L. & W., he returned to Toledo as assistant general freight agent, which position he held until his promotion to general freight agent, as above noted.

J. W. Graham

G. B. Harper, assistant general development agent of the Illinois Central at Memphis, Tenn., has been appointed general development agent, with headquarters at Chicago, Ill., succeeding John C. Clair, resigned; Mark Fenton, industrial agent at Chicago, has been appointed assistant general development agent, with office at Memphis, succeeding G. B. Harper, effective June 16.

A. R. Atkinson, assistant general freight and passenger agent of the Southern Pacific, Texas Lines, at San Antonio, Tex., has left railway work to enter military service. His former duties in the passenger department will be carried out by E. McClannahan, division passenger agent, at San Antonio, and in the freight department by Hubert Loeffler, who has been appointed acting division freight agent.

Engineering and Rolling Stock

P. S. Walter has been appointed general car inspector of the Pennsylvania Lines West of Pittsburgh, Southwest system, with office at Columbus, Ohio, vice Charles F. Thiele, promoted.

H. T. Ruhl, division engineer of the Canadian Government Railways at Moncton, N. B., has been appointed engineer maintenance of way and structures of the Delaware & Hudson, with headquarters at Albany, N. Y.

G. H. Likert, general foreman of the locomotive department on the Chicago, Rock Island & Pacific, at Horton, Kans., has been appointed master mechanic of the Colorado and Nebraska divisions, with headquarters at Goodland, Kans., succeeding M. B. McPartland, resigned.

Purchasing

A. W. Munster, general storekeeper of the Boston & Maine, at Boston, Mass., has been appointed purchasing agent, succeeding B. S. Hinckley, resigned. Effective July 1.

Special

Francis H. Sisson, assistant chairman of the Railway Executives' Advisory Committee, has been elected vice-president of the Guaranty Trust Company of New York, in charge of publicity and advertising. He will continue, however, to act in an advisory capacity to Frank Trumbull, chairman of the Railway Executives' Advisory Committee. Mr. Sisson was born in Galesburg, Ill., graduated from Knox College in that city, and also from Harvard University, where he took a postgraduate course. He did newspaper work in Galesburg and Peoria, Ill.; in Chicago and New York, and was for some time vice-president and general manager of the H. E. Lesan Advertising Agency of New York. He became connected with the Railway Executives' Advisory Committee about three years ago.

Railway Officers in Military Service

Wm. B. Ryan, vice-president and general manager of the Tehuantepec National, has been commissioned a captain in the Engineer Officers' Reserve Corps, and has been assigned to the 7th Regiment U. S. Reserve Engineers, Atlanta, Ga.

A. R. Atkinson, assistant general freight and passenger agent of the Southern Pacific, Texas Lines, at San Antonio, Texas, has left railway service to go into military service as a captain in the Quartermaster's Department Reserve Corps.

F. E. Lamphere, assistant engineer in charge of construction on the Baltimore & Ohio, Chicago Terminal, Chicago, has received a commission as major in the United States Army and has been assigned to Louisville, Ky., to take charge of the construction of a training camp.

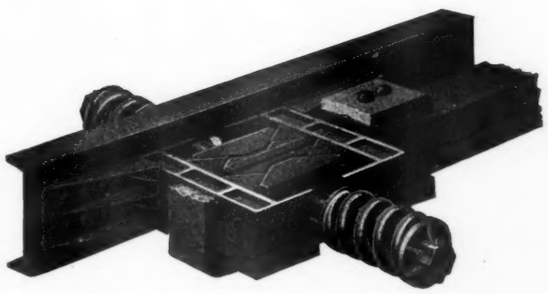
F. N. Reynolds, terminal superintendent of the Cleveland, Cincinnati, Chicago & St. Louis, at Indianapolis, Ind., has been appointed transportation officer in charge of traffic, with headquarters at Fort Benjamin Harrison (Indianapolis), by the National Railroad Defense Committee.

The following railroad men have been appointed constructing quartermasters, with the rank of major in the Quartermasters' Reserve Corps, in charge of the construction of cantonments to be erected for the National army: William Couper, an engineer for the Pennsylvania Railroad, in charge of the cantonment at Columbia, S. C., and Earle Bell Morden, an engineer for the Chicago, Milwaukee & St. Paul, at Battle Creek, Mich.

OBITUARY

Charles Sumner Hall, engineer of track elevation on the Chicago & North Western, died at his home at Evanston, Ill., on June 15.

Cardwell Friction Draft Gear



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The Lonesome Game

THE selling game is a lonesome job at best. Every day the same old grind, the same old drill against indifference and hard luck; and every night, some new town, some new hotel and a newer bed.

And how much more lonesome still when few railway men have ever heard about you or your goods; and how much harder to put the steam behind your talk and the punch into your arguments when you feel that very little thought or effort has been made to push you to the front.

Surely, it's a mighty lonesome job, an uphill fight, a scrap of brains and brawn against sheer indifference. Oh yes, salesmen fight and dig and plug against these heavy odds and they do win with profit to their firms and to themselves. But oh for the magic touch of advertising; for the ever open-sesame of publicity that heralds you and sings your wares, that moves you faster along your route and gets you by the outer office guards! For *you* know that advertising would blaze your trail, would smooth your way, and would make the salesman's game, the King of Games, SUCCESS.

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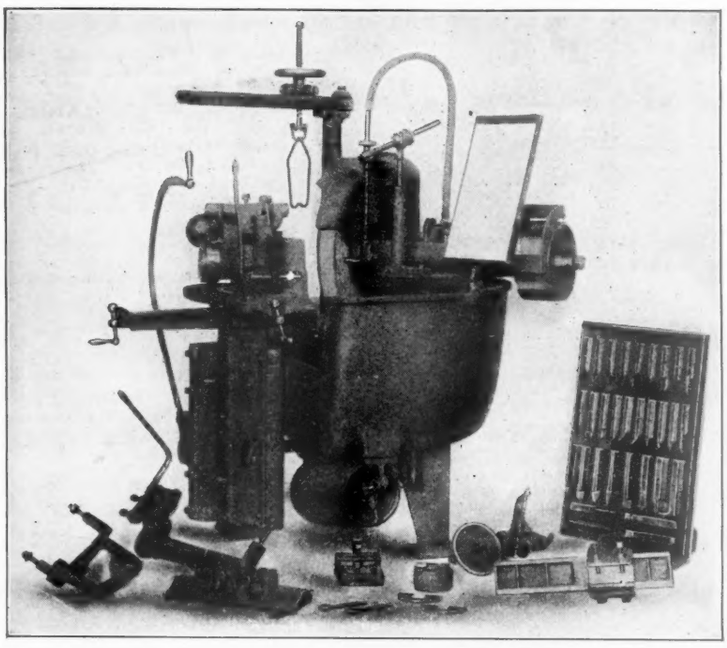

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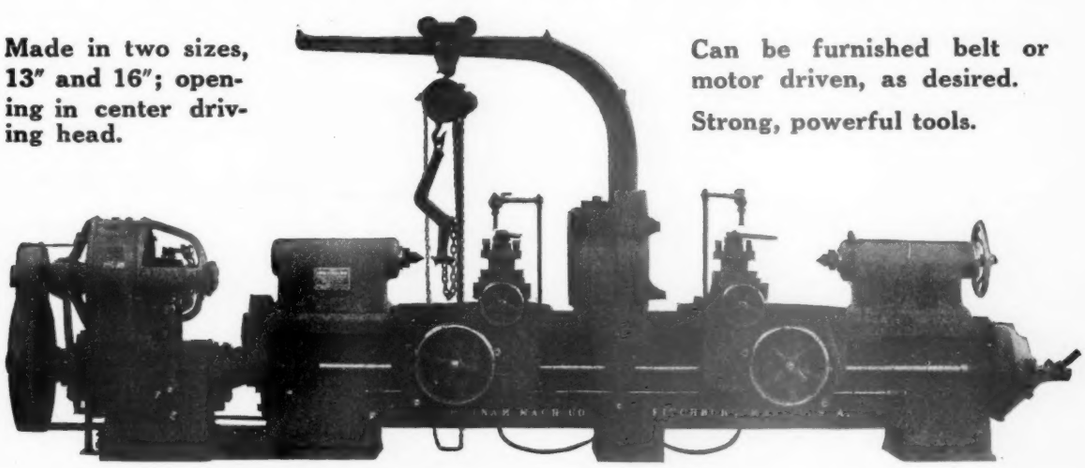

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A CONFERENCE DECISION
Look For NATIONAL The Name
¶ The material to be specified for any important engineering project is generally decided in a conference.
¶ Last week a typical engineering conference was illustrated on two pages (312-313); the final decision being announced by the chief in these words: "AND ALL THE PIPE IS TO BE NATIONAL".
NATIONAL TUBE COMPANY - - Pittsburgh, Pa.

NORTHERN ENGINEERING WORKS.

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TRADE MARK
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Permanent Roof Lights See pages 872-875 Sweets 1916

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Terminal Transportation

Importance of Applying Scientific Methods to Handling Materials at Terminals and in Transfer Yards—Means of Reducing High Cost of Hand Trucking and Speeding Up Work

IT is useless to dwell upon high costs in these days. The subject is foremost in everyone's mind whether it be the cost of production or the cost of consumption. The prices of materials have soared to unheard of heights—labor is expensive and is needed in the mighty business of making war.

The Problem of the Day

The problem of the railroad executive is to keep his costs within commercial bounds. He **must** pay for his materials, and the solution lies in equalizing matters by cutting down labor charges, while at the same time performing the patriotic duty of releasing men for the cause of democracy. The question then resolves itself into a consideration of how it may be done. One of the ways is one that **is to-day** producing astonishing results in hundreds of plants.

A Picture of Your Conditions

As you read this, think of your own conditions. Think of the amount of local transportation that is required at terminals, transfer yards, warehouses or docks.

Calculate the investment you could afford to put into carrying machinery if it were to enable you to cut even to one-half the labor now employed in hauling goods about.

Count the hand trucks employed in loading and unloading one car; figure the time lost, even unavoidably, by the hand truckers. Multiply this by the number of cars handled yearly. Think of what a saving in time can be effected, of cutting the labor in half!

The Industrial Truck or Tractor

Here are shown a few typical photographs of the little vehicles that constitute the only available substitute for hand trucks. They handle large loads and handle them quickly. They are labor-saving devices. They handle, with the aid of one man, loads that by ordinary methods would require from two to five men, depending on conditions. **Herein lies their ability to cut expense** and they will do it for YOU as they have done it for hundreds of others. No matter how enthusiastic you may become, the results from a properly laid out installation in one year's operation will astonish you. And the laying out is up to the industrial truck engineers, who are at your service for the asking.

Adaptable to All Conditions

There are three general kinds of industrial vehicles, and each is built in different sizes, so that a suitable equipment for any set of conditions may be selected.

The Industrial Truck proper is a carrying truck upon which the goods are loaded directly.

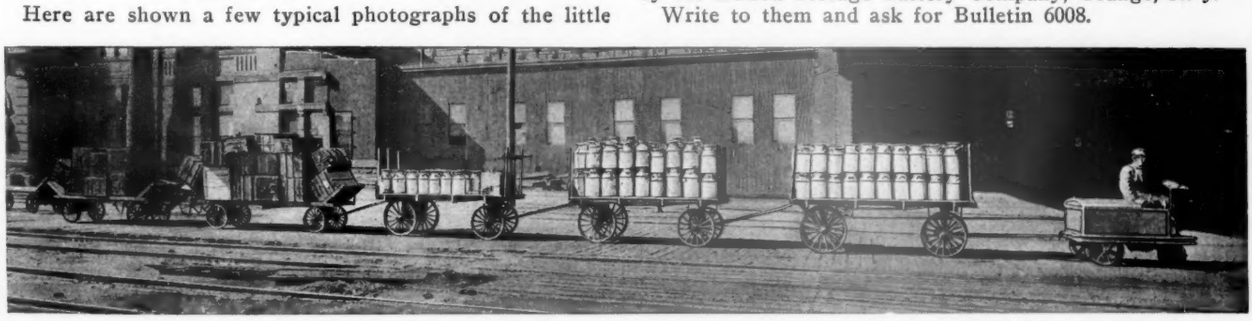
The Elevating Platform Industrial Truck is designed to run under a loaded platform, elevate it from the floor, carry it to the desired location and deposit it there for attention. The truck itself is immediately released for further duty.

The Industrial Tractor does not ordinarily carry a load itself, but hauls one or more trailers carrying goods. In this way enormous loads are transported at once.

Each of these types has a field to which it is best adapted which depends upon the conditions to be met.

One of the biggest illustrated stories showing many of the widely varying industries in which these storage battery industrial trucks and tractors are effecting big economies has just been published by the Edison Storage Battery Company, Orange, N. J.

Write to them and ask for Bulletin 6008.



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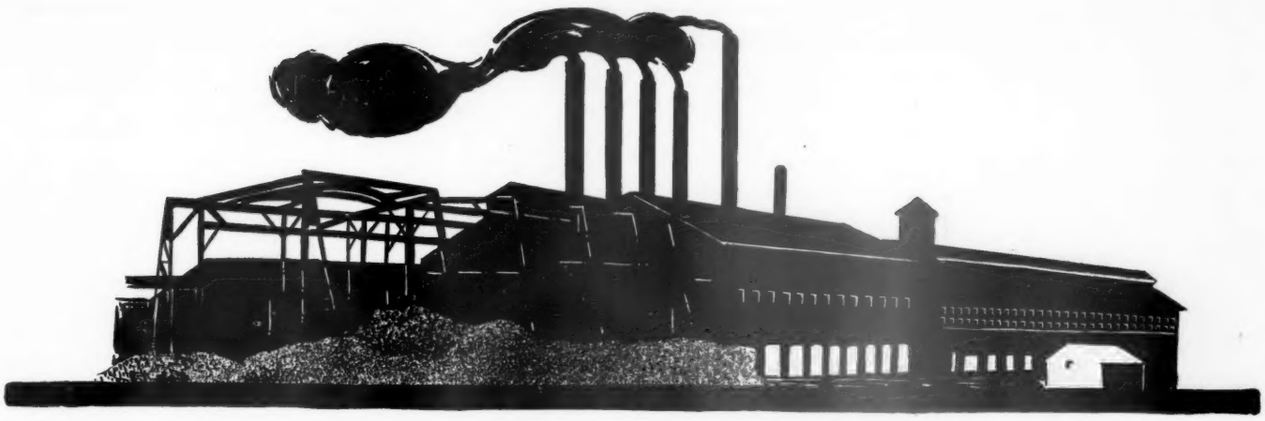

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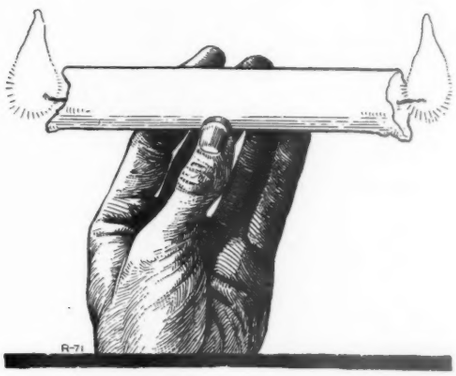

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TOOLS, MACHINISTS'.
Cleveland Twist Drill Co.

TOOLS, PNEUMATIC — (SEE PNEUMATIC TOOLS).

TOOLS, PORTABLE—(SEE PORTABLE TOOLS).

TOOLS, TRACK.
Cleveland Twist Drill Co.
Railroad Supply Co.
Zeinicker Supply Co., Walter A.

TRACING CLOTH—(SEE DRAWING MATERIALS).

TRACK DRILLS—(SEE DRILLS, TRACK).

TRACK JACKS—(SEE JACKS).

TRACK SAFETY APPLIANCE.
Acar Mfg. Co.

TRACK TOOLS — (SEE TOOLS), TRACK).

TRACTORS, TURNTABLE.
Nichols & Bro., Geo. P.
Weir & Craig Mfg. Co.

TRAIN CONTROL SYSTEMS.
Julian-Beggs Signal Co.
Miller Train Control Corp.
Simmen Automatic Ry. Signal Co.

TRAIN SHEDS.
American Bridge Co.

TRANSFER TABLES.
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Brown Hoisting Machinery Co.
Industrial Works.
McMyler Interstate Co.
Nichols & Bro., Geo. P.
Northern Engineering Works.
Sellers & Co., Inc., Wm.
Weir & Craig Mfg. Co.
Whiting Foundry Equipment Co.

TRANSMISSION, POWER.
Sellers & Co., Inc., Wm.

TRAP DOOR — (SEE DOORS, PLATFORM TRAP).

TREADS, SAFETY.
American Mason Safety Tread Co.

TROLLEYS — (SEE HOISTS, ELECTRIC; HOISTS, HAND AND HORSE POWER).

TRUCK BOLSTERS — (SEE BOLSTERS, STEEL).

TRUCK FRAMES—(SEE FRAMES, TRUCK).

TRUCKS, CAR AND LOCOMOTIVE.
American Steel Foundries.
Commonwealth Steel Co.
Economy Devices Corp.
McConway & Torley Co.
National Railway Appliance Co.
Pressed Steel Car Co.
Standard Car Track Co.

TRUCKS, HAND AND ELECTRIC.
Buda Company, The

TRUCKS, TRAILER.
Economy Devices Corp.

TRUNKING.
Great Southern Lumber Co.
Southern Cypress Mfrs. Ass'n.
Southern Pine Assn.

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National Tube Co.
Parkesburg Iron Co.
Tyler Tube & Pipe Co.
Worth Bros. Co.

TUBES, STAY.
Falls Hollow Staybolt Co.
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TURNBUCKLES.
American Bridge Co.

TURNTABLES.
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Northern Engineering Works.
Sellers & Co., Inc., Wm.
Weir & Craig Mfg. Co.
Whiting Foundry Equipment Co.

TURNTABLE TRACTORS — (SEE TRACTORS, TURNTABLE).

TURRET LATHES — (SEE LATHES, TURRET).

TWIST DRILLS—(SEE DRILLS, TWIST).

UNDERFRAMES, STEEL.
Greenville Steel Car Co.
Pressed Steel Car Co.
Ralston Steel Car Co.
Ryan Car Co.

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Arnold Co., The

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Pyle-National Company, The
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Kay & Ess Co.
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VARNISH GUMS.
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VESTIBULE DIAPHRAGMS — (SEE DIAPHRAGMS, VESTIBULE).

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Gould Coupler Co.
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Lillie, Dexter P.

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American Steel & Wire Co.
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WIRE FENCING.
Interstate Iron & Steel Co.

WIRE, INSULATED.
American Steel & Wire Co.
General Electric Co.
Goodrich Co., B. F.
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WIRE ROPE TRAMWAYS—(SEE CABLEWAYS).

WIRE, VANADIUM.
American Vanadium Co.

WOOD BLOCK FLOORING.
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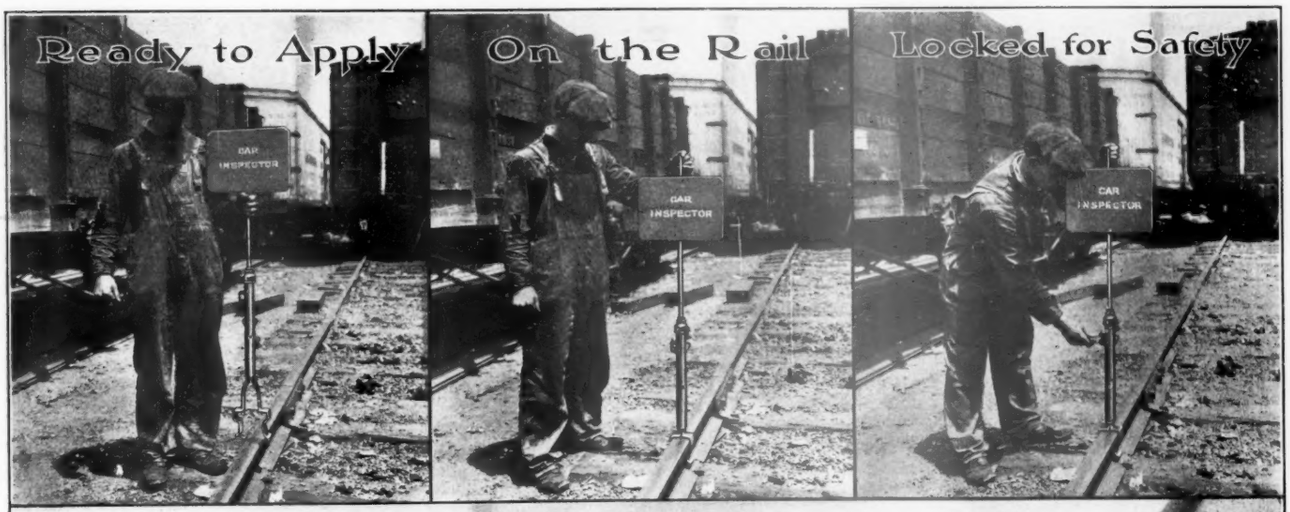

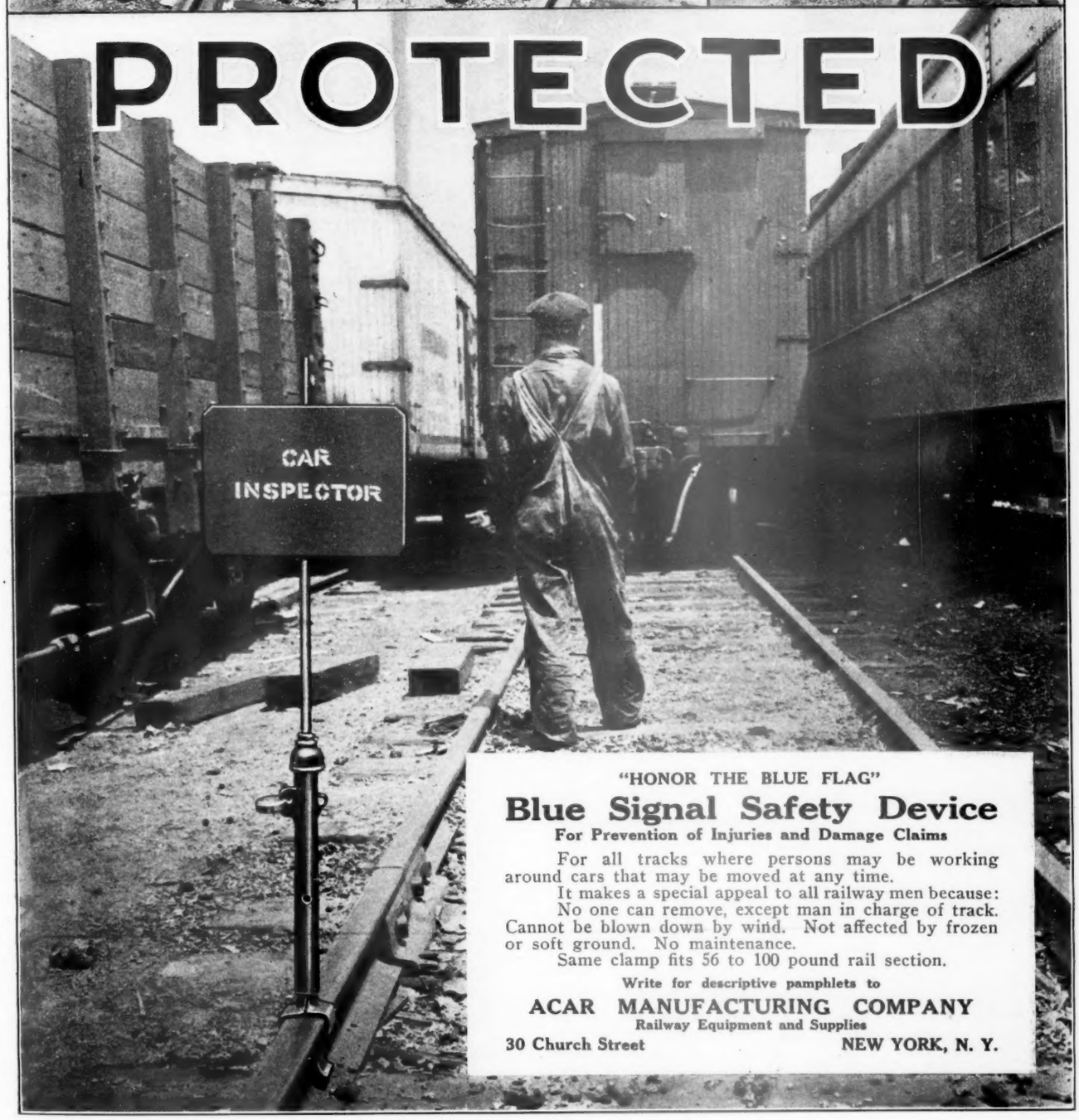

"HONOR THE BLUE FLAG"

Blue Signal Safety Device

For Prevention of Injuries and Damage Claims

For all tracks where persons may be working around cars that may be moved at any time.

It makes a special appeal to all railway men because: No one can remove, except man in charge of track. Cannot be blown down by wind. Not affected by frozen or soft ground. No maintenance.

Same clamp fits 56 to 100 pound rail section.

Write for descriptive pamphlets to

ACAR MANUFACTURING COMPANY

Railway Equipment and Supplies

30 Church Street NEW YORK, N. Y.

Independence Hall

Independence Day
July 4, 1917

TO commemorate the 141st anniversary of the signing of the Declaration of Independence and the trying days which marked the birth of a new nation; to keep fresh the memory of those patriots who, not only during the revolution but in the years since, have kept alive the ideals of true Americanism; to signalize the re-awakening of the Spirit of Freedom: we set apart this space.

Betsy Ross House

Signing the Declaration of Independence

The Midvale Steel Company
Cambria Steel Company
Worth Brothers Company

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DISTRICT SALES OFFICES

Atlanta Boston Chicago Cincinnati Cleveland Detroit
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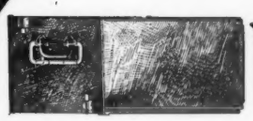
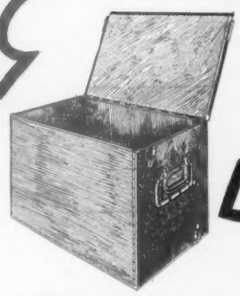
MILLIONS SAVED RAILROADS



Collapsible Metal Carrier Collapsed to ¾" thickness. Simply folds up—no loose parts to lose.



Collapsible Metal Carrier

A COLLAPSIBLE METAL CARRIER

(Pilfer-Proof—Damage-Proof—100% Efficient

WILL SOLVE THE PROBLEM

St. Louis, June 5, 1917.

To Whom It May Concern:

The spirit of conservatism seems to pervade every department of this country and especially along the line of wood products, and justly so, if one realizes that wood is becoming scarcer all the time owing first of all to the fact of the extravagant ways in which it has been used, and secondly to the increased demand, so that it appears to us that it is only a question of time when something in the way of a container which can be carried back and forth will take its place, but in order to do this the shipper should be obliged to pay no more out and return than he now pays out. It is only a question of time when some sort of an arrangement of this kind will have to be made to meet the increased demands for containers.

Another reason is that a container which is to make many trips coming and going must, of necessity, be made very durable, which increases the weight, and this is another reason why the freight question should be considered very carefully.

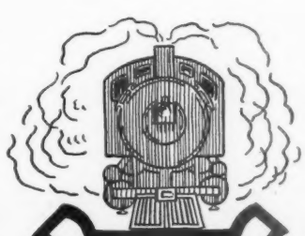
Yours very truly,

HENRY HEIL CHEMICAL CO.,
D. S. Green, Sec'y.

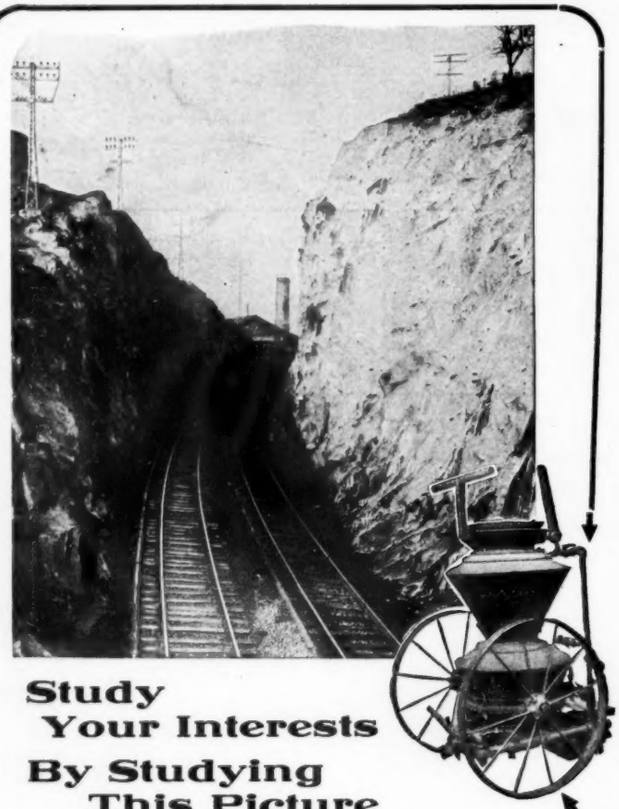
PNEUMATIC SCALE CORPORATION, LTD.

Norfolk Downs, Mass.

The Pneumatic Collapsible Metal Carrier occupies about 15% less space than a wooden box of same inside dimensions.



We shall be pleased to demonstrate our Commodity Carrier to railroads. Send for details today!



Study Your Interests By Studying This Picture

This illustration of a rock cut on the N. Y. C. & H. R. RR. affords to Chief Engineers and other railroad officials a good example of the Satisfaction and Safety secured to railroads through use of the

CEMENT-GUN

the gun of general utility in railroad work. The gun of which Mr. J. H. Prior, Ch. Engr. Illinois State Public Utilities Commission, said recently,

"The mere patching of concrete work has been a thorn in the side of everybody responsible for its maintenance for a generation. If the Cement-Gun offers a way out, *which I think it does,* that alone is a tremendous achievement."

Look at this loose rock cut on the N. Y. C. & H. R.—this cut sealed with *"Gunite,"* the sand-cement product of the Cement-Gun, which defies the elements. Look, and remember just as the Cement-Gun process automatically insures an aggregate which is dense, homogeneous and waterproof, it insures financial savings which in the aggregate prove an important factor in lower maintenance cost.

The Cement-Gun can be purchased outright and used by any one. It is not a restricted article, neither is its usefulness restricted, which is the reason

You Need a Cement-Gun for Every Division.

Cement-Gun Company, Inc.

South 10th and Mill Streets, Allentown, Pa.

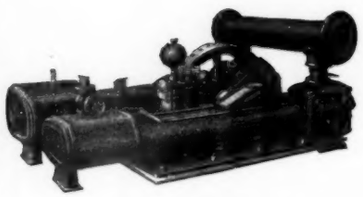
New York Office: 30 Church Street

E. R. Ayers, 1414 Fisher Bldg., Chicago, Ill.
John A. Traylor, Newhouse Bldg., Salt Lake City, Utah.
Taylor Engineering Co., 538 Central Bldg., Seattle, Wash.
Taylor Engineering Company, Vancouver, B. C.
A. R. Roberts, 727 Traders Bank Bldg., Toronto, Ont., Can.

"IMPERIAL" AIR COMPRESSORS

The ideal sought in building the "Imperial" type was the delivery of compressed air at the least possible cost and to be able to offer it at a price which would represent the best value to be obtained.

Features of great automatism, such as automatic lubrication, automatic regulation and reliable trouble-proof valves, were resorted to with the result that maintenance and attendance expense is less than that with any other type of compressor.



Bulletins No. 3312 & No. 3033

INGERSOLL-RAND CO.
11 Broadway, New York

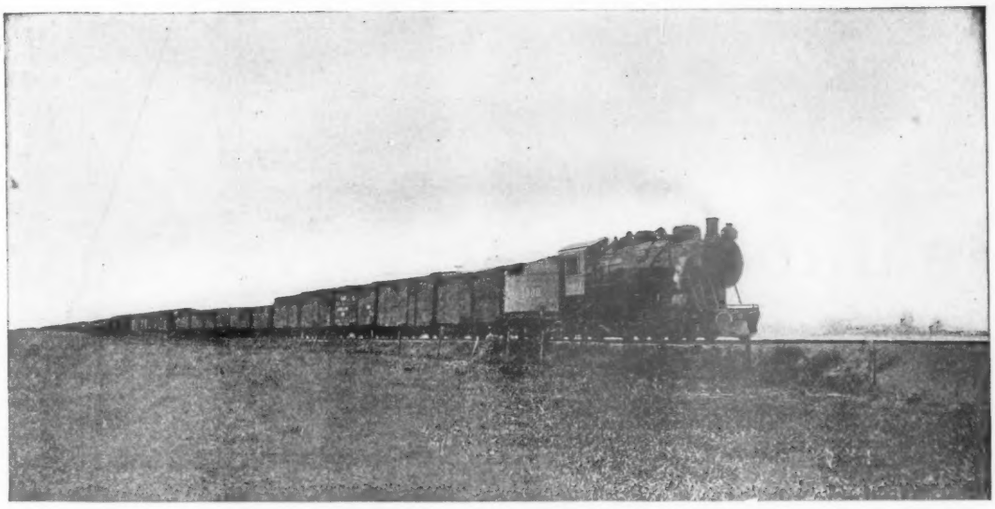
97-C

KERITE

THE use of Kerite is the logical result of experience.

The *increasing* use of Kerite is the logical result of an increasing appreciation of the sound policy of using nothing but the best.

KERITE INSULATED WIRE & CABLE COMPANY
NEW YORK CHICAGO

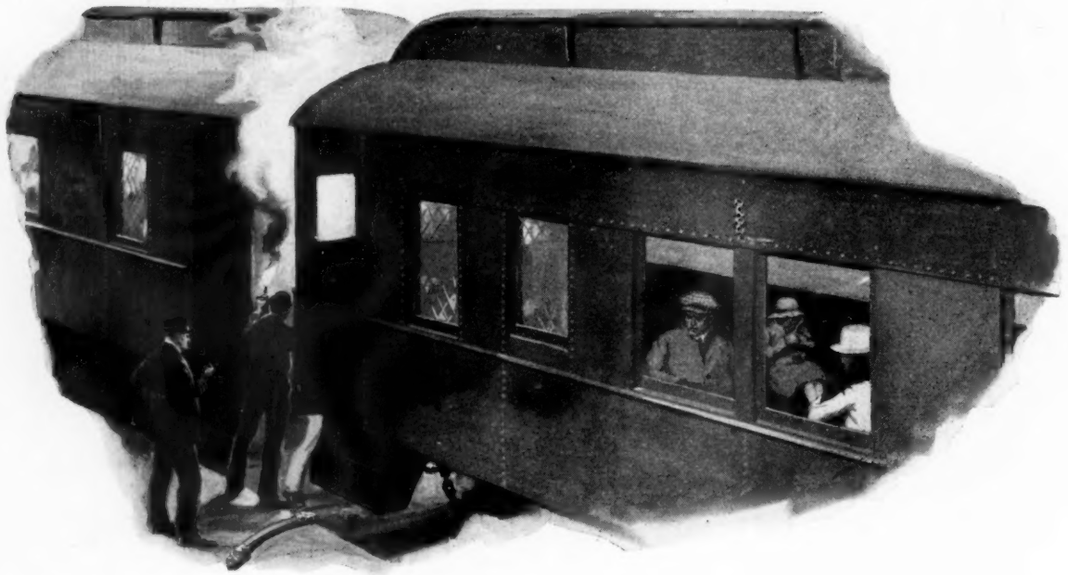


The Miller Train Control has been in practical operation on 107 miles of double track main line on the C. & E. I. R. R. for several years handling all classes of trains, and has proven in actual service that:—

1. It is thoroughly practical;
2. It is dependable under all weather conditions;
3. It is a safety appliance which actually does lessen the liability of accidents;
4. It does not interfere with the movement of trains.
5. The cost of installation and maintenance is not prohibitive.
6. It is easily and readily adapted to meet special operating requirements on different railroads.

Miller Train Control

STAUNTON, VA. **DANVILLE, ILL.**



Guarantees Carry No Steam

Car heat hose is still being bought by many on a basis of guarantee rather than on a basis of performance.

Practically every manufacturer gives his hose a one-year guarantee.

But a guarantee cannot carry steam when the hose bursts.

It cannot differentiate one construction from another, any more than it can protect against the costly delays and penalties which bursting hose so often cause.

All that it can hope to do is to insure replacement, after a certain amount of correspondence costing almost as much as the hose.

It is true that Goodyear Car Heat Hose also carries this guarantee and is no different in that respect from any other grade.

But Goodyear Car Heat Hose is neither sold nor bought merely because of the guarantee.

It is specified by many because its superior construction insures against bursting—because its selected materials protect you from delays.

Its genuine high pressure-cured inner tube resists the vulcanizing and hardening effect of high-pressure steam.

The duck used as the base for the cover of the superior inner tube is of a specially-woven balanced construction.

In consequence it avoids the destructive effects of the expansion and contraction likely to damage a grade of hose not so carefully made.

For years it has rendered exceptional service on some of the largest trunk lines in the country.

It protects the passengers from discomfort.

It saves money indirectly by insuring reduction of penalized delays—by giving *better* service.

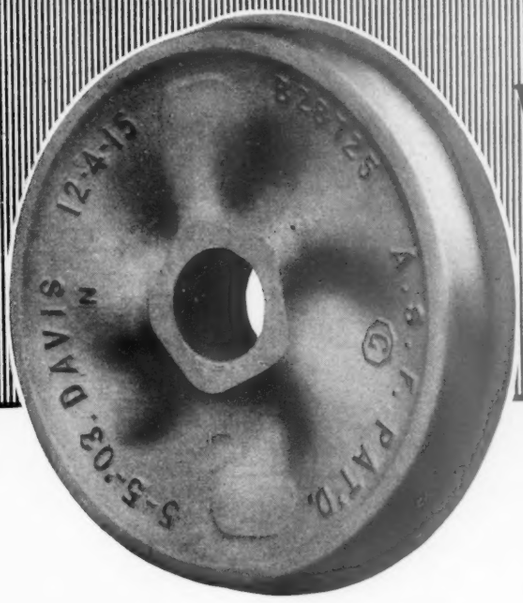
It saves money directly by giving *longer* service at a lower cost.

The Goodyear Tire & Rubber Co.
Akron, Ohio

GOODYEAR
AKRON

DAVIS

STEEL WHEEL



High mileage and low maintenance cost are the reasons for its use on over 350 roads.

American Steel Foundries
1105 McCormick Building CHICAGO

GOULD COUPLER CO.

OFFICES:
30 EAST 42d ST., N.Y.C.
THE ROOKERY, CHICAGO
DEPEW, N.Y.

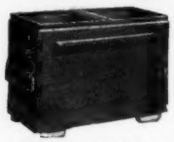
WORKS:
AXLE FORGE, DEPEW, N.Y.
MALLEABLE IRON, DEPEW, N.Y.
CAST STEEL, DEPEW, N.Y.

Gould Friction Draft Gear

GOULD MALLEABLE JOURNAL BOXES
GOULD FRICTION DRAFT GEAR
GOULD BOLSTERS
GOULD COUPLERS

Willard STORAGE BATTERY

NO-WASH
Train Lighting Batteries

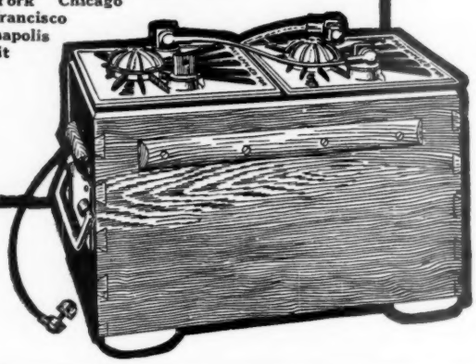


Double Compartment Tank

The choice of every railroad whose officials consider the ultimate expense in preference to the initial cost.

Willard Storage Battery Company
Cleveland, Ohio

New York Chicago
San Francisco
Indianapolis
Detroit



Cast Steel

Buckeye Truck Frames, Truck Bolsters, Key Connected Yokes and Journal Boxes. "Major" Top Lift and Side Lift Couplers.

The Buckeye Steel Castings Company
Works and Main Office: COLUMBUS, OHIO

New York Office
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FROGS

CROSSINGS, SWITCHES, SWITCH STANDS
FOR
MOST SEVERE USE
WE SPECIALIZE ON THIS GRADE OF WORK

CLEVELAND FROG AND CROSSING CO.
CLEVELAND, O.

BARBER TRUCKS
CENTER PLATES & SIDE BEARINGS

Will relieve Wheel Flange and Coupler Knuckle wear, also any wear on Journal Bearings.

STANDARD CAR TRUCK CO.
McCormick Bldg., Chicago

"Little Giant" AIR DRILLS

Use Little Giant Ball Bearing Drills for Drilling, Reaming, Flue Rolling, Tapping, Wood Boring, etc.

The Ball Bearings
The increased port areas
The directness of port passages
The increased diameter of thrust bearings.
The hand holes in cylinders and
The method of bolting the bonnets and gear cases to the cylinder—

are features of Little Giant Drills resulting in the high power, the long life and the economical upkeep and air consumption for which these machines are famous.

Send for Bulletin 127.

Chicago Pneumatic Tool Company
1024 Fisher Bldg., Chicago 52 Vanderbilt Ave., N. Y.
Branches Everywhere

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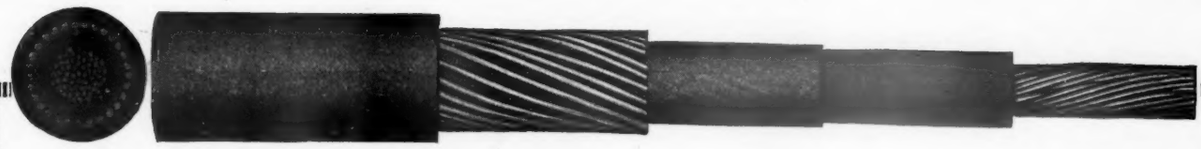


Requests

GOODRICH

Concentric Mining Machine Cable

for future orders

The superintendent of a well-known coal company wrote his purchasing agent as follows:

"In answer to your letter of April 1st, pertaining to 250 ft. of concentric machine cable, please be advised that this cable was put in service November 1st, 1915 and is still in use, apparently in good condition yet.

This cable seems to be very good and I would advise purchasing this kind of cable hereafter.

Yours very truly,

(Signed)
Superintendent.

Just another confirmation of Goodrich integrity. An honest combination and arrangement of rubber, chemicals, wire and process of cure—the best human intelligence can determine and select for the service in question—makes Goodrich Concentric Mining Machine Cable.

6 reasons for economic service given

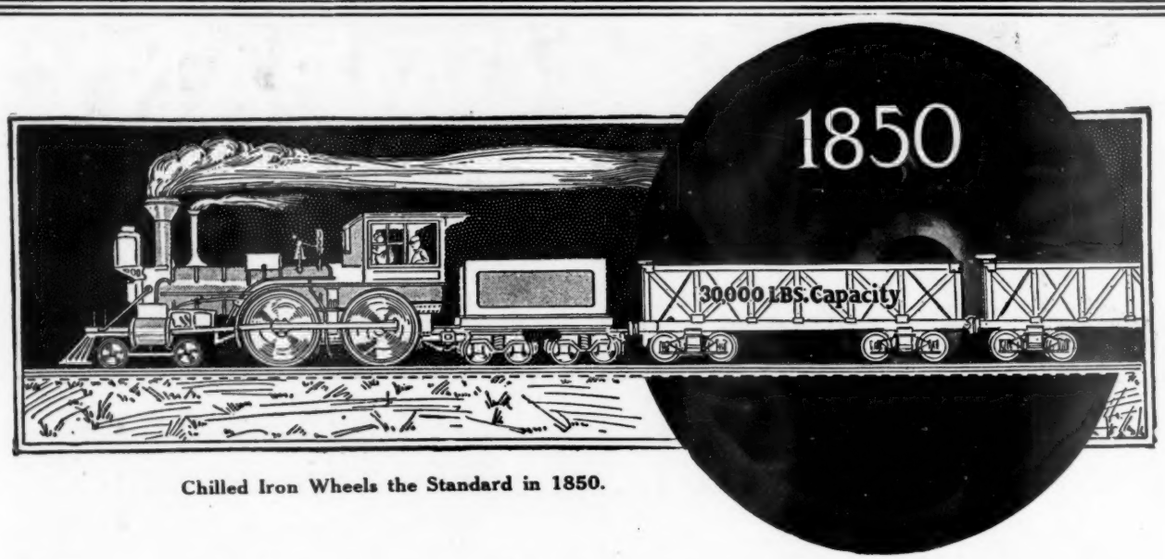
1. Tough in cover, like the tread of the famous Goodrich automobile tire—smooth, will not catch on obstructions.
2. Small in diameter—more easily reeled.
3. More flexible with use.
4. Gives three to five times more service than braided cable under identical conditions.
5. Waterproof—no braids to rot or fray.
6. A cost cutter for mine operators everywhere.

What are your service requirements?

The B. F. Goodrich Company

Makers of the Celebrated Goodrich Automobile Tires—*"Best in the Long Run"*

Factories: Akron, Ohio **Branches and distributors in all districts**



Chilled Iron Wheels the Standard in 1850.

The Wonderful Single Service Chilled Iron Wheel

Single Service means when a wheel is applied to a car it is allowed to run its life without any repairs whatever.

No Shop Investment in expensive lathes is required for re-turning, which is the case with other types of wheels.

And the Manufacturers are so confident of the performance of the Chilled Iron Wheels that freight car wheels are guaranteed to yield a minimum service under ordinary conditions of

6 years for 625 lb. M. C. B. Wheels
5 years for 675 lb. M. C. B. Wheels
4 years for 725 lb. M. C. B. Wheels

The actual guaranteed cost to the railroad per year for a 625 lb. M. C. B. Wheel is one-sixth of the cost price, less the scrap value of the old wheel, which is accepted as part payment for the new wheel.

The Master Car Builders Inter-change rules base the cost of renewals upon the following:

	Chilled Iron	Other Types
Cost of New Wheel	$9.00	$19.50
Less average scrap credit price	4.75	4.50
Net	$4.25	$15.00
Interest @ 5% for one year	.21	.75

Difference in interest in favor of Chilled Iron Wheel 54 cents.

As the average service of Chilled Iron Wheels is from fifty to seventy-five per cent greater than the guarantee it will be seen that the increased interest charges alone of other types of wheels will more than absorb the renewal cost of the Chilled Iron Wheel.

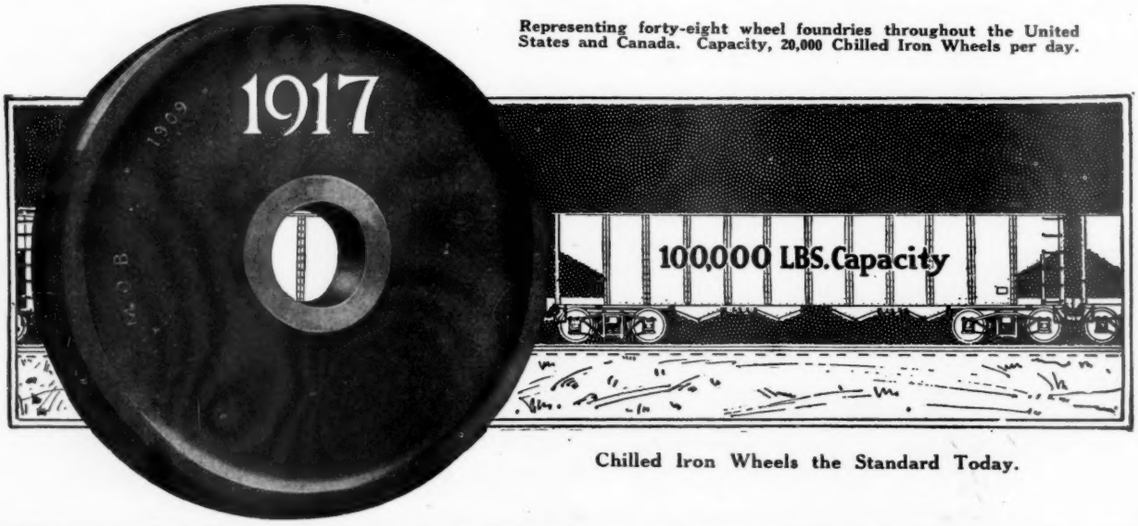
Ninety-seven per cent of the freight cars in use are equipped with Chilled Iron Wheels and service measures the standards.

25,000,000 now running

Association of Manufacturers of Chilled Iron Wheels

1228 McCormick Building, Chicago, Illinois

Representing forty-eight wheel foundries throughout the United States and Canada. Capacity, 20,000 Chilled Iron Wheels per day.



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in either
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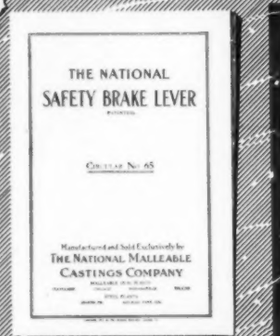

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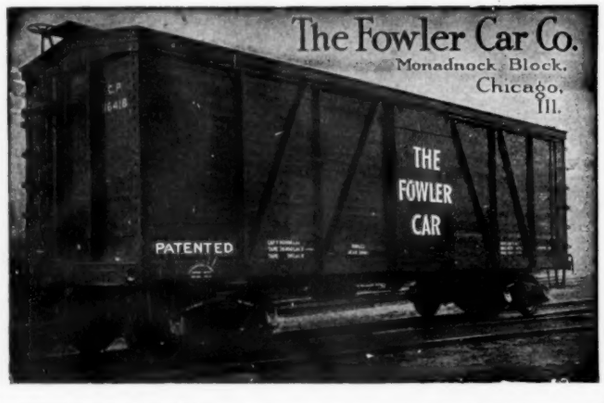

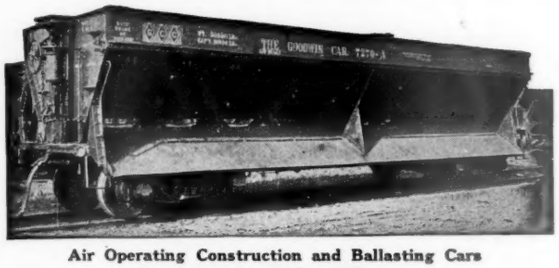

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THE IDEAL CAR FOR MATERIAL MOVEMENTS
Leased for Long or Short Periods
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HERE is a dust guard that is something more than a piece of wood with a hole in it.

SALES REPRESENTATIVES

We are desirous of securing adequate representation through railway supply dealers in the principal cities for our *PresSteel Dust Guard* on which patents have been recently allowed.

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The Chief Engineers of several prominent roads have expressed strong interest in the PresSteel Dust Guard. There is every indication that it will find a ready market.

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With Six Drop Doors

Load Limit	-	110,000 pounds
Cubic Capacity	-	2,084 Cu. Ft.
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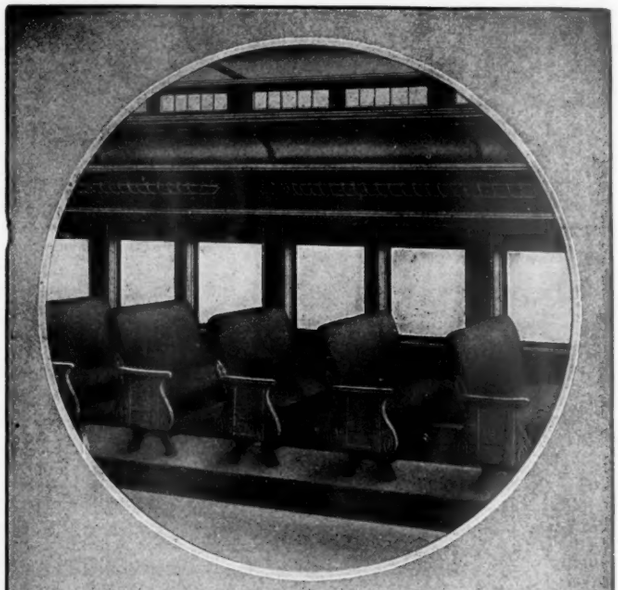
Weight	- -	41,000 pounds

28



Hale and Kilburn Steel Passenger Car Equipment as used on the Pennsylvania Railroad System. Our effort for more than thirty years has been to produce a perfect car seat, one that will give perfect service every day in the year.

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PHILADELPHIA
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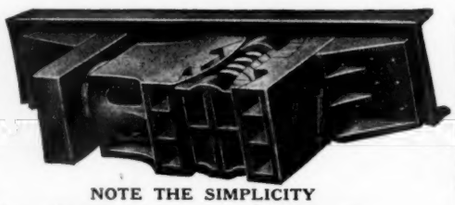
BUTLER

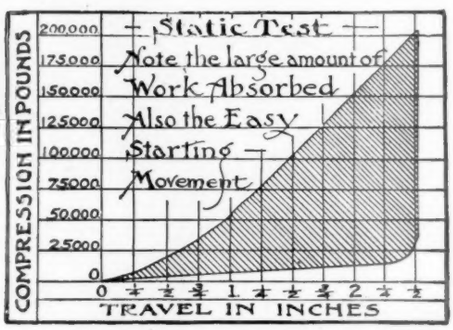
DRAFT GEARS

FRICTION or SPRING



NOTE THE SIMPLICITY

FRICTION GEARS—Piper Patents—200,000 lbs. Capacity.
FEW PARTS.—Large Wearing Surfaces, 6½ or 9⅛ Yoke, or Combined with any Side Link Attachment.
HAS ALL THE POINTS OF A PERFECT GEAR.



ALSO TANDEM SPRING GEARS, CASE PAT., 6¼ x 8 OR 8 x 8 SPRINGS.
PERFECT SPRING PROTECTION

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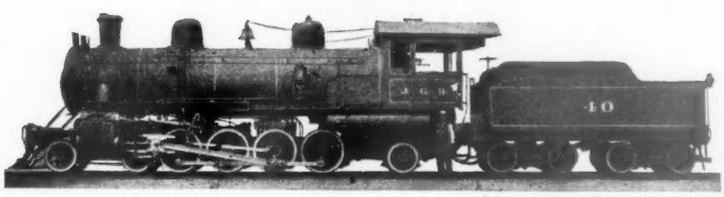
Cleveland Pressed Steel Carline

Specially adapted to Steel Side Plates, but equally good for Wood Framing.
The Strongest Carline made. It meets every demand of a Perfect Roof Support.

CLEVELAND CAR SPECIALTY CO., Cleveland, Ohio

"Standard" Parts

For The Antilles



GOVERNMENTS realize that reliability and dependability of locomotive equipment are necessary for economical, satisfactory and continual operation.

The Jamaica Government locomotive illustrated above is equipped with "Standard" driving tires; "Standard" No. 1663 steel tired engine truck and trailer wheels; "Standard" No. 1733 steel tired tender wheels; open hearth hammered steel driving axles and engine truck axles; wrist pins; connecting rods; piston rods and stub straps.

"The 'Standard' Brand on your material is an assurance of eventual economy."

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Steel Tires, Steel Tired Wheels, Solid Forged and Rolled Steel Wheels, Rolled Steel Gear Blanks, Steel Axles, Steel Springs, Steel and Iron Forgings, Steel and Malleable Iron Castings, Rolled Steel Rings, Steel Crusher-Rolls and Shells, Steel Pipe Flanges.

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In Use by 281 Companies
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In Use by 285 Companies
Both Made by the
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FORGINGS
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From 10 lbs. to 100,000 lbs. each of every shape and Description

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Owners and Manufacturers of
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Some of the products this company furnishes for the construction and maintenance of steam railroads are

Steel Cross Ties
Carnegie Rolled Steel Wheels
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Carnegie Rolled Steel Pistons

All of these commodities are of the usual Carnegie Standard of Excellence.

Carnegie Steel Company
General Offices—Pittsburgh, Pa.
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A Special Finish for every railway need
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Manufacturers of Glidden Quality Railway Varnishes, Enamels, Japans, Linseedoil Elixir, etc.
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GLIDDEN
Railway Finishes

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Manufacturers of Steam Turbines
Ranging in Capacity from
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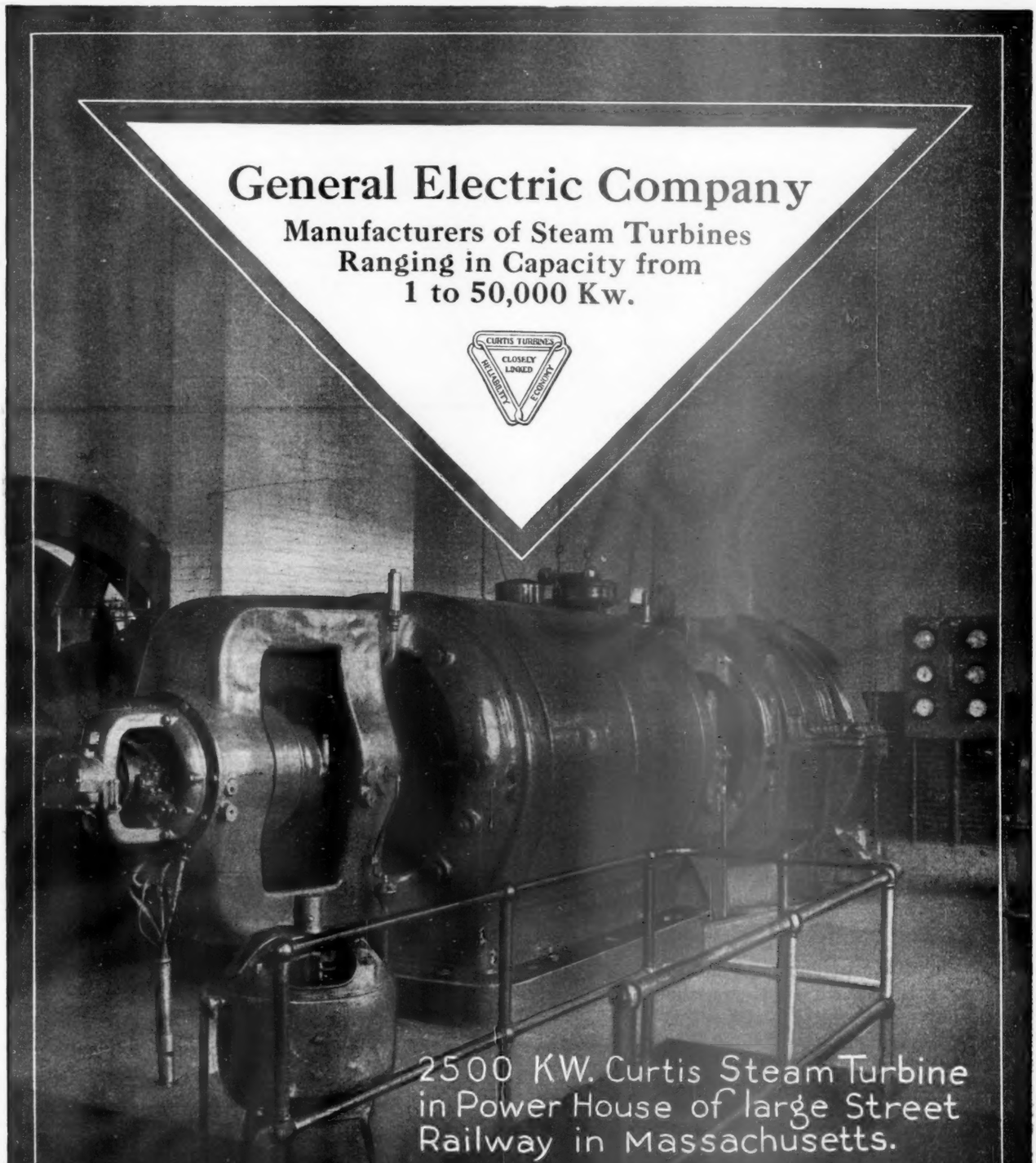
CURTIS TURBINES
CLOSELY LINKED
RELIABILITY ECONOMY



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6150

Railway Age Gazette

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WE GUARANTEE, that of this issue 9,025 copies were printed; that of these 9,025 copies 7,460 were mailed to regular paid subscribers, 158 were provided for counter and news companies' sales, 803 were mailed to advertisers, 332 were mailed to exchanges and correspondents, and 272 were provided for new subscriptions, samples, copies lost in the mail and office use; that the total copies printed this year to date were 243,121, an average of 9,350 copies a week.

THE RAILWAY AGE GAZETTE is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.).

WE are at war—in a great and terrible war, fraught with limitless possibilities of danger. The measure of this has not developed. The mobilization of the effort and sacrifice we must make has not come home to many of us.

To carry this war through to a successful issue will require the utilization of every atom of our transportation system at its highest efficiency.

We have confidently appealed to every man and woman, great or small, having any part in this transportation system for the steadfast co-operation which alone can bring success.—*Fairfax Harrison, Chairman of the Railroads' War Board, in the Patriotic War Number of the Railway Age Gazette.*

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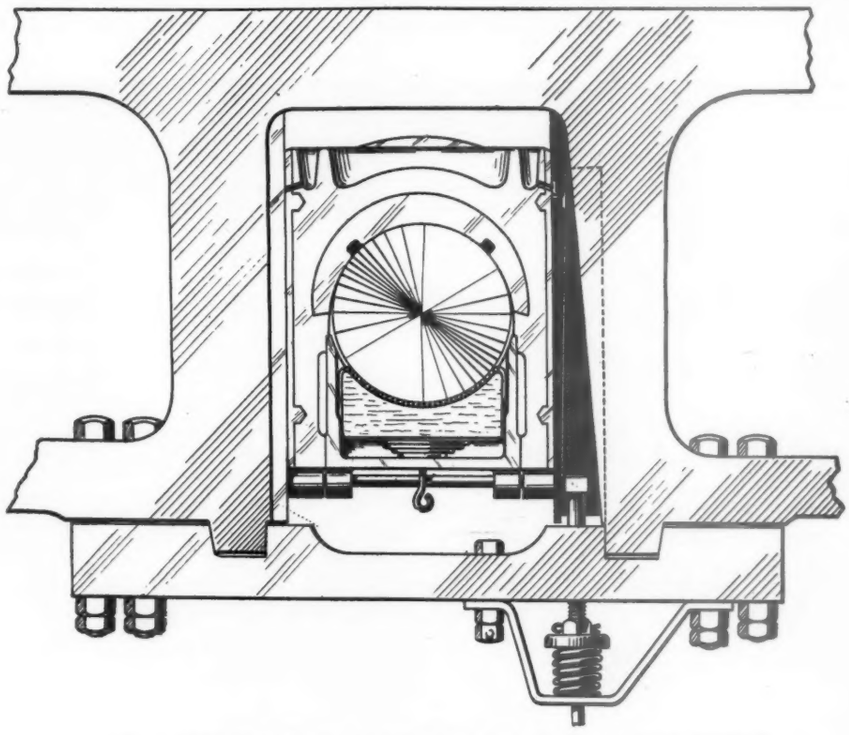
Eliminate advertising and you reduce buying to its barest bread - and - butter basis.



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MEN SAVING

Men saved by rendering their work unnecessary is clear gain to help those in the trenches.

This automatic adjustable driving box wedge saves men by maintaining adjustments automatically.

It saves men in the round house and men in the shop.

It has added 13,500 miles to engine shopping mileage.

We will name the road if you ask.

Franklin Railway Supply Co.

30 Church St., New York

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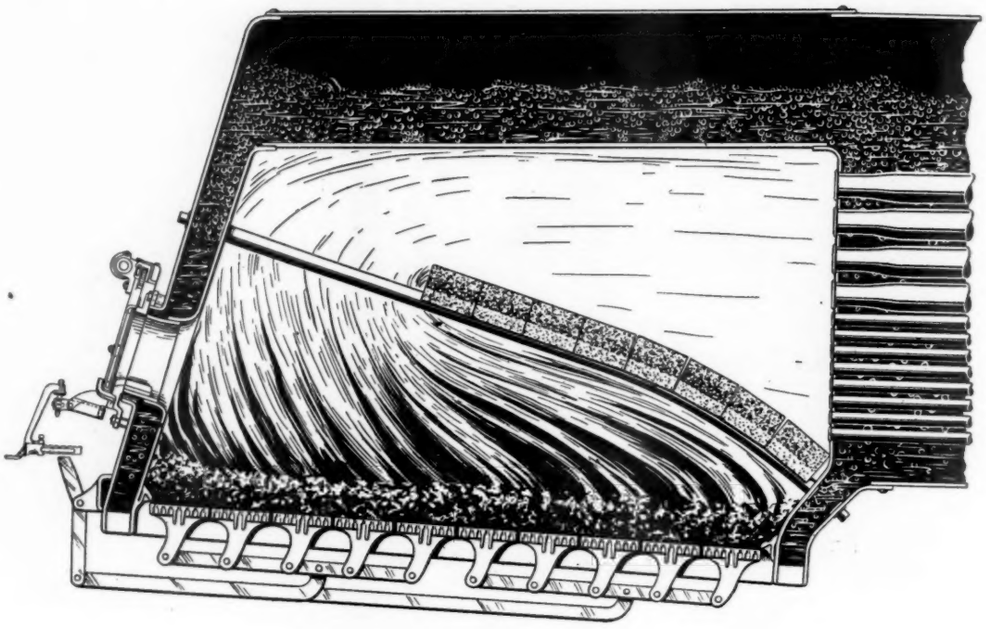

SECURITY SECTION ARCH
Squeezes the Heat Out of the Coal, Protects the Firebox, Keeps Engines in Service

HERE'S SOMETHING TO FIX QUICK!

4½ hours a day the average engine works,
13 hours the mechanical department has it,
4 hours it loafs at terminals,
2½ hours—we've forgotten where they went.
Military conditions won't permit these enormous terminal delays.
Time required for blowing and caulking flues, and cleaning front ends must be eliminated.
Correct this with the Security Arch.

AMERICAN ARCH COMPANY

Specialists in Locomotive Combustion

McCORMICK BLDG.
CHICAGO

30 CHURCH ST.
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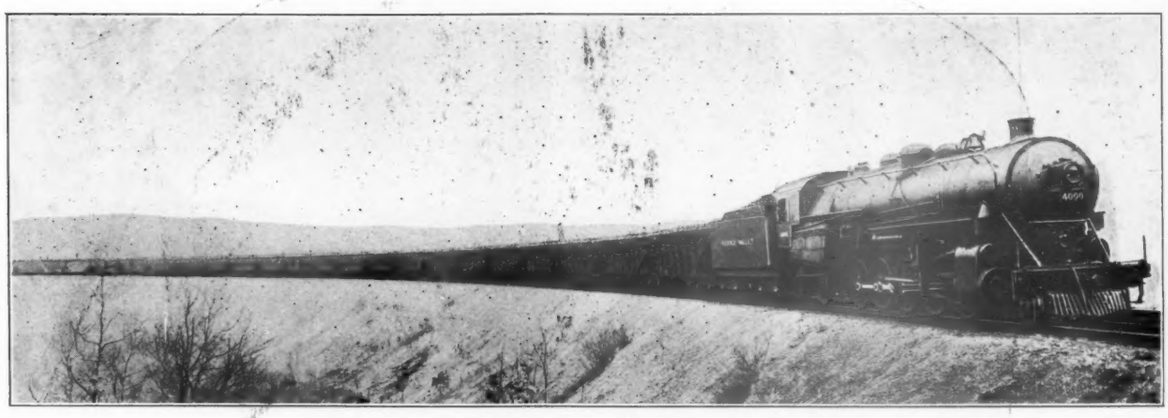

Ragonnet Power Reverse controls these Santa Fe type engines, the latest Baldwin addition to Lehigh Valley power.

RAGONNET AND COAL

On the hill, every pound of coal is made effective because getting the right notch is made easy.

On the level, she can be hooked up so fine that not a pound of coal is wasted.

In the yard, Ragonnet makes four switchers do the work of five.

And all the time that wear saving air cushion is reducing tear and wear on the entire valve gear.

135 roads now use Ragonnet Power Reverse.

Get into this list for the sake of your record.

ECONOMY DEVICES CORPORATION

McCormick Bldg.
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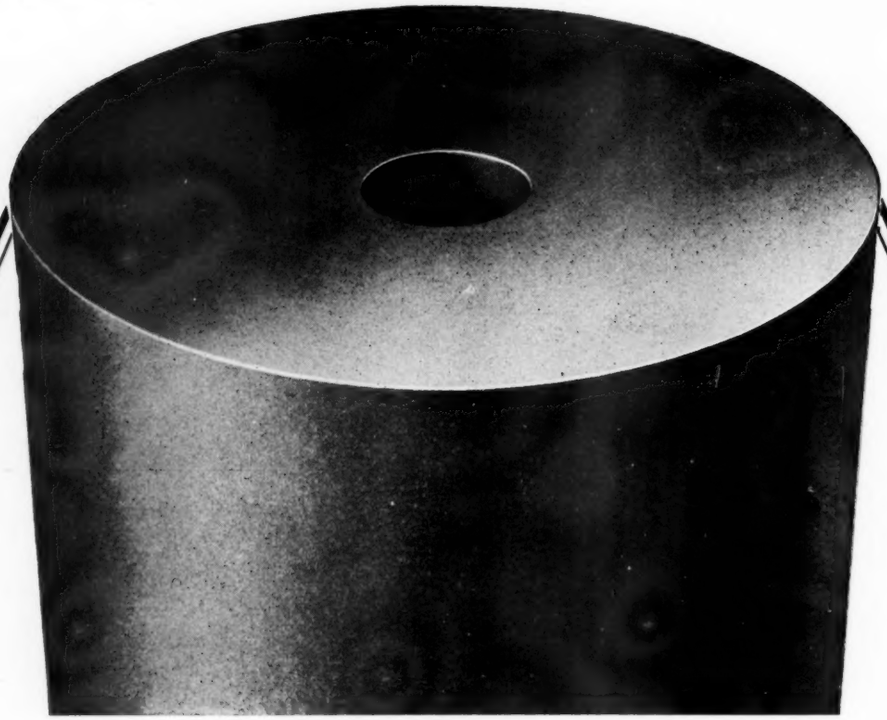

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IT MEETS WAR NEEDS

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Rome Hollow has both.

It's made by the same men with the same painstaking care as Rome Superior.

No rifle barrel material is more carefully made.

Specify it with confidence.

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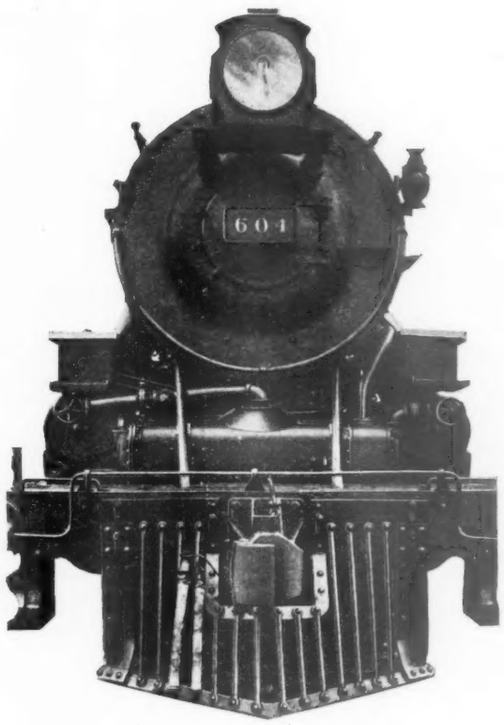

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Heating feed water by waste heat is a success.

This conservation of coal energy is ready for the war emergency.

It's equivalent to enlarging the boiler.

It has the advantages of convenient, quick application to existing engines.

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The DAILY consumption of Vanadium in the manufacture of steel is now equal to the YEARLY production of ten years ago, and greater than all the Vanadium produced before that time—1907.

The reason? Because

VANADIUM

is the most powerful metal known for alloying with steel, and experience has amply demonstrated that for elasticity, strength, toughness and endurance

VANADIUM STEELS

are unexcelled.

Let us advise you as to the best type for your purpose.

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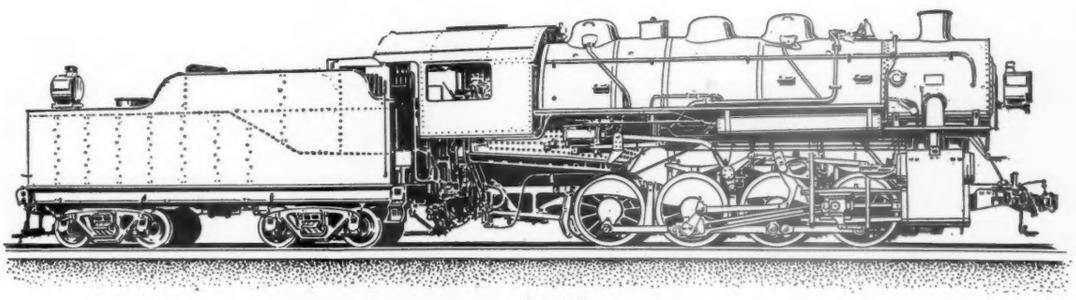


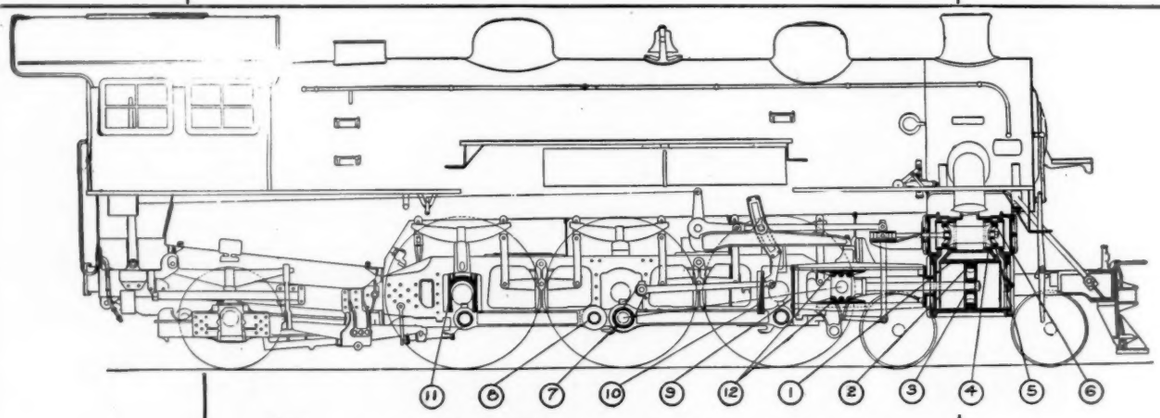
Terminal capacity has been increased on a number of roads by the adoption of eight-wheel switchers.

These switchers, by minimizing congestion, have brought terminal work up to the high plane to which modern freight locomotives have brought road work.

Consider eight-wheel switchers when purchasing new switching locomotives.

AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET, NEW YORK



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for
12 of The Principal Parts of a Locomotive

1 Cylinder Bushings
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We can help you meet the emergency in your locomotive repairs, by placing a stock of Hunt-Spiller Gun Iron castings on your storehouse platform.

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383 Dorchester Ave. So. Boston, Mass.

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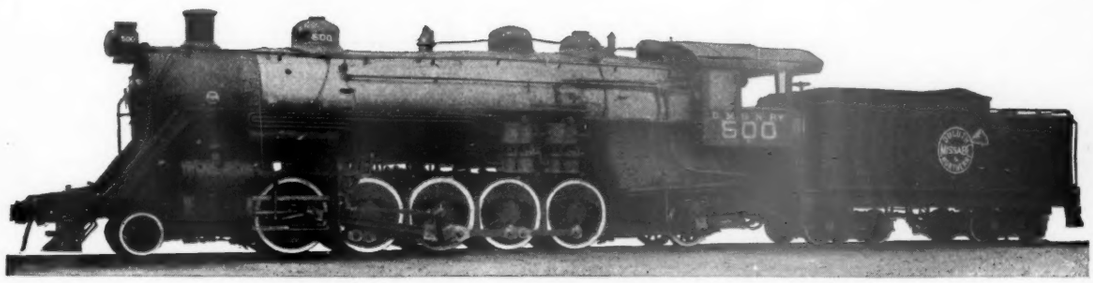
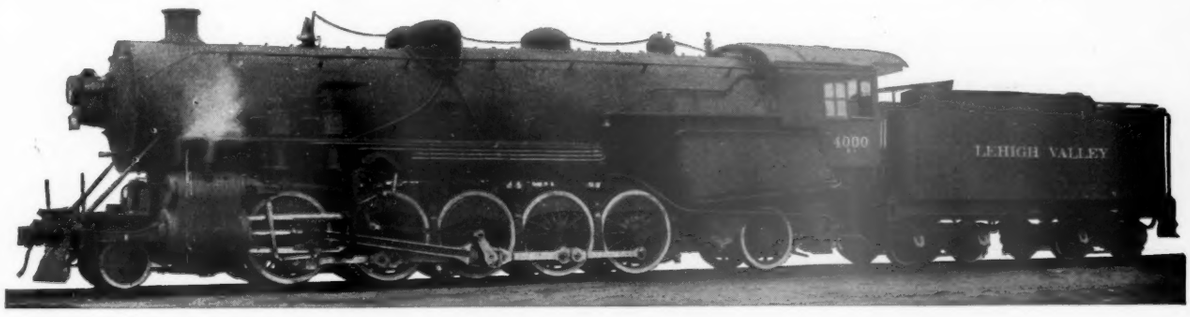


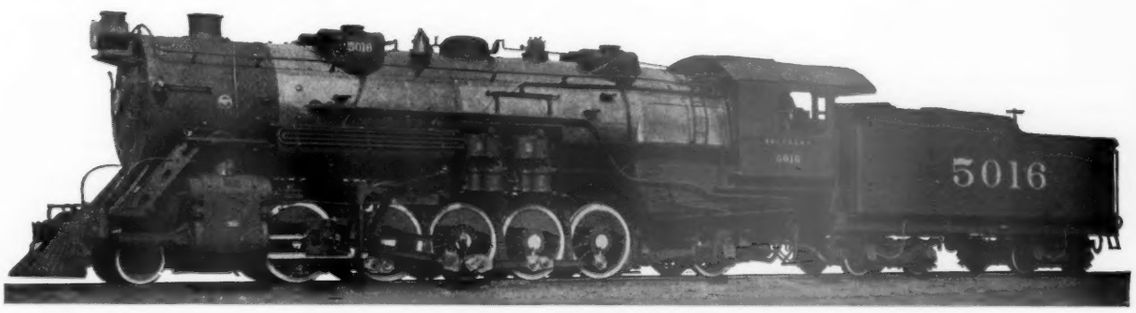
Santa Fe Type Locomotive, Duluth, Missabe & Northern Ry.
C. W. Seddon, Supt. Motive Power.

CYLINDERS—28 x 32 inches.
DRIVING-WHEELS, DIAM.—60 inches.
WEIGHT, TOTAL ENGINE—346,600 lbs.
TRACTIVE FORCE—65,800 lbs.



Santa Fe Type Locomotive, Lehigh Valley R. R.
H. C. May, Supt. Motive Power.

CYLINDERS—29 x 32 inches.
DRIVING-WHEELS, DIAM.—63 inches.
WEIGHT, TOTAL ENGINE—370,000 lbs.
TRACTIVE FORCE—72,000 lbs.



Santa Fe Type Locomotive, Southern Ry.
J. Hainen, Asst. to Vice-President, in charge of Motive Power Dept.

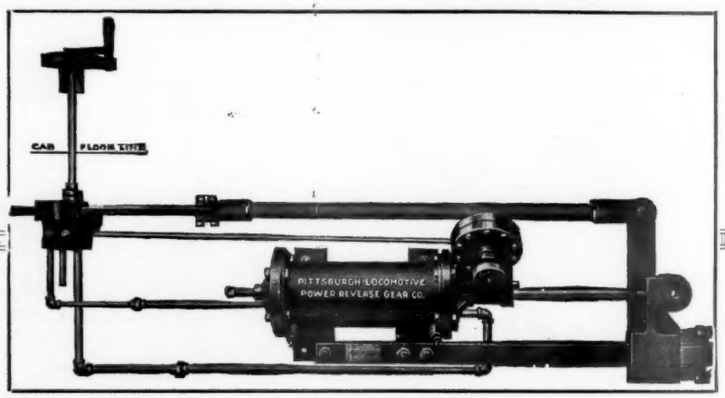
CYLINDERS—28 x 32 inches.
DRIVING-WHEELS, DIAM.—57 inches.
WEIGHT, TOTAL ENGINE—370,600 lbs.
TRACTIVE FORCE—71,100 lbs.

THE BALDWIN LOCOMOTIVE WORKS
PHILADELPHIA, PA., U. S. A.

Represented by

F. W. Weston, 120 Broadway, New York, N. Y.
Charles Riddell, 627 Railway Exchange, Chicago, Ill.
C. H. Peterson, 1210 Boatmen's Bank Bldg., St. Louis, Mo.
George F. Jones, 407 Travelers Building, Richmond, Va.
A. Wm. Hinger, 722 Spalding Building, Portland, Ore.
Williams, Dimond & Co., 310 Sansome St., San Francisco, Cal.

Cable Address: "BALDWIN, PHILADELPHIA."



Snyder Power Reverse Gear

Snyder Power Reverse Gear

The special features that recommend the Snyder Gear to mechanical officers are as follows:

Positive lock.

Position of operating handle indicates accurately position of link-blocks.

Responds positively to notch-by-notch movement.

Will not change position in roundhouse as pressure leaks off.

No pressure in power cylinder except at time of desired movement.

No soft packing to adjust or renew from shopping to shopping of engine.

Leakage through valve or packing has absolutely no effect on position of link-blocks.

For further information and a detailed description of construction and operation, write

Pittsburgh Locomotive Power Reverse Gear Co.

309 Carson St. S. S. Pittsburgh, Pa.

The Reason Why The Staybolt Firebox Must Go

Not only is the staybolt firebox dangerous, but its maintenance is unnecessarily high, and its life is comparatively short. Also, the staybolt box is structurally weak; it is not satisfactory, and what is more, it can never be made entirely satisfactory—It must go.

The remedy, therefore, lies not in the improvement of the staybolt box, but in its elimination. In this elimination the

JACOBS-SHUPERT FIREBOX

is now playing an important part and is destined to play the predominating part. The reason for this is because service records have shown that the Jacobs-Shupert Box is free from the inherent defects of the ordinary box of staybolt construction.

The superior strength of the Jacobs-Shupert Box permits it to endure overheating without failure for long periods of time, and destructive boiler explosions from failure of the firebox are impossible.

More than 375 Jacobs-Shupert Fireboxes in service today. For all facts and figures, address

Jacobs-Shupert U. S. Firebox Company
30 Church Street **New York, N. Y.**
Works: Coatesville, Pa.

Modern Heavy Locomotives Require

Mechanical Stokers

if they are to be

Worked to Full Capacity

Lighter Hand Fired Locomotives

are equipped with

Mechanical Coal Pushers

to promote scientific firing

We have Stokers and Coal Pushers for
Every Kind of Locomotive and Service

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Horizontal Coal Pusher
Slope Sheet Coal Pusher

Catalogue on Request

LOCOMOTIVE STOKER CO.

Main Office and Works
Robinson and Darrah Streets
Pittsburgh, Pa.

Railway Exchange
Chicago

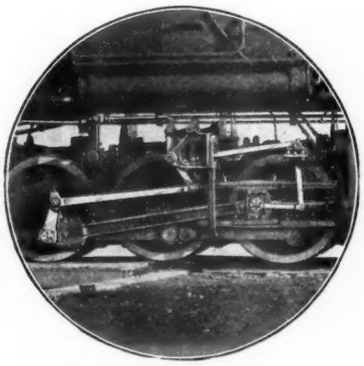
50 Church Street
New York

Scrap

Your Old-fashioned Inside Valve Gears and Take Your Old Locomotives Out of

Scrap

You Can Do This



Baker Valve Gear
Over 4500 in Service

by applying the Baker Valve Gear, the modern outside gear. It takes no longer to apply the Baker than it does to repair the old one. Besides, the Baker is guaranteed to give a 5% increase in pulling capacity with a 5% decrease in fuel consumption, and this with lower maintenance costs.

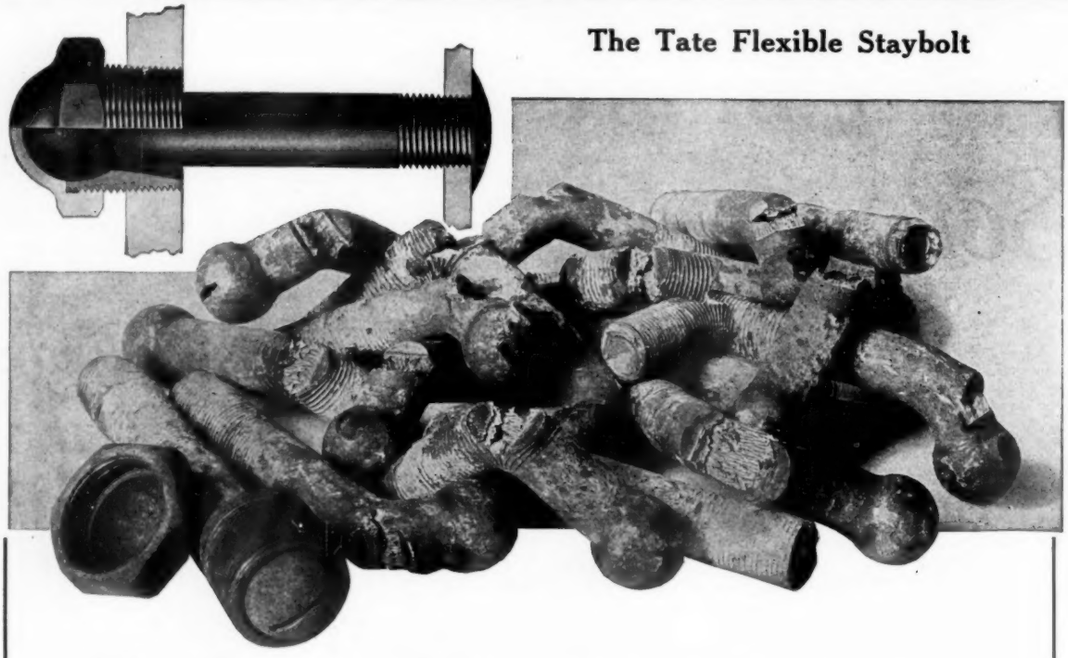
Write for a copy of the guarantee

THE PILLIOD COMPANY

30 Church Street, New York, N. Y.

Western Representative, Mudge & Co., Railway Exchange, Chicago, Ill.

The Tate Flexible Staybolt



The Result of Staybolt Adjustment

The above illustration shows Tate Flexible Staybolts that were removed after two years service from the throat sheet of a locomotive boiler, for the reason that they were applied to an old firebox, which was removed and renewed.

These staybolts when applied were adjusted one half turn back from the sleeve seat before being riveted up, to allow for the longitudinal expansion of the outer shell beyond that of the firebox.

No bolts were broken, but under each head a bearing was distinctly marked, indicating that each bolt sustained its proportionate load due to pressure.

Each bolt was nicked and bent under the head in order to ascertain the condition of the structure of the iron, which was found to be wholly fibrous, in fact, no different from the fibre of the natural bar, proving that the bolts had performed their functions without being strained.

This condition is most difficult to obtain with either a rigid staybolt, or a flexible staybolt too tightly installed where excessive expansion takes place. Suitable bolt adjustments, in localities of the firebox sheets where the relative sheet expansion is greatest, have been found quite effective in preserving the natural strength of the staybolt iron, under the stress imposed by the expansion of the firebox from the cold to the hot state of boiler.

The Tate Flexible Staybolt affords suitable adjustment, and many shops are now following this practice, and are obtaining results that have proved very satisfactory in prolonging the life of both staybolts and sheets.

Refer to Our Catalog for Adjustment Data

IN USE ON OVER 500 RAILROADS

FLANNERY BOLT COMPANY

VANADIUM BUILDING, PITTSBURGH, PA. B. E. D. STAFFORD, Gen. Mgr.

J. ROGERS FLANNERY & COMPANY, Selling Agents
Vanadium Building, Pittsburgh, Pa.

GEO. E. HOWARD, Eastern Representative
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COMMONWEALTH SUPPLY CO., Southeastern Representatives
CHAS. HYLAND, Boiler Expert

3

Leaders!

LEADERS! Certainly! Here are the facts: Four spring works; two tire mills; five wheel works. Conceded to be the largest manufacturer in the world of SPRINGS, STEEL TIRED WHEELS, and STEEL TIRES. With these facilities, necessarily, we are in a position at all times to make prompt deliveries.

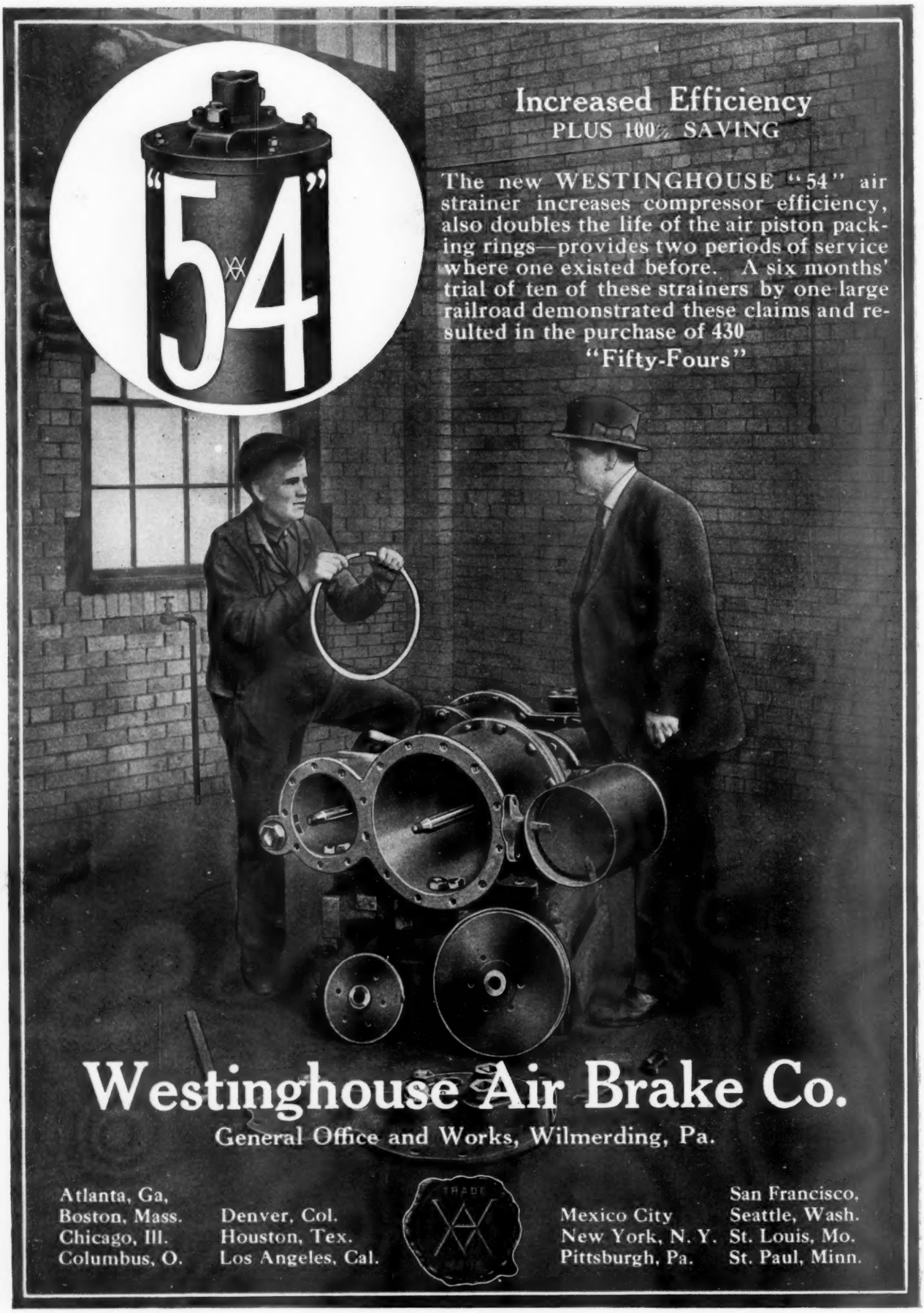
"Railway" Products

Not only recognized in the United States for their superior quality, "Railway" products are also well and favorably known the world over.

RAILWAY STEEL-SPRING CO.
30 Church Street, New York

BRANCHES

Chicago	Detroit	Mexico City	Denver
Louisville	St. Louis	St. Paul	Norfolk


"54"
Increased Efficiency
PLUS 100% SAVING
The new WESTINGHOUSE "54" air strainer increases compressor efficiency, also doubles the life of the air piston packing rings—provides two periods of service where one existed before. A six months' trial of ten of these strainers by one large railroad demonstrated these claims and resulted in the purchase of 430
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Westinghouse Air Brake Co.
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Houston, Tex.
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Mexico City
New York, N. Y.
Pittsburgh, Pa.
San Francisco,
Seattle, Wash.
St. Louis, Mo.
St. Paul, Minn.

The Buyer's Interest in Wasteless Advertising

BUYERS who appreciate that waste in selling must eventually be passed on to them in some form are paying more and more attention to the sales methods of the concerns seeking their business.

> The extravagant use of space in publications of general circulation to advertise a commodity or a service appealing chiefly to a certain well-defined class, is not only poor judgment, but *it is an economic waste.*

Can you imagine an intelligent salesman, with a proposition for a steel mill or a dry goods store, calling at every office in town in an effort to locate a prospect? How needlessly wasteful to adopt similar methods in advertising, which is simply an improved means of accomplishing certain necessary steps of a sale.

On the other hand, the seller who uses the business papers reaching *only* the class interested in his message, is employing the most direct, efficient and economical method of getting in touch with prospective buyers.

> Properly used, the good business paper bears the same relation to the sales department that an improved machine does to the production department. Better selling methods go hand in hand with better manufacturing methods.

To encourage wasteless advertising, the most efficient modern means of bringing buyer and seller together, there is every reason why the discriminating buyer should give preferred consideration to the concern that tells its business story in the buyer's own business paper.

Ask this office anything you want to know about Business Papers or Business Paper Advertising.

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Headquarters, 220 West 42nd Street New York

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Each member has subscribed to the 10 "Standards of Practice," a high code of ethics covering all departments of business paper publishing.

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Aviation & Aeronautical Engineering
Boot & Shoe Recorder
Brick & Clay Record
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Canadian Railway & Marine World
Cement World
Clothier & Furnisher
Coal Age
Concrete
Domestic Engineering
Drygoodsman, The
Dry Goods Economist
Dry Goods Reporter
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Electrical Review & Western Electrician
Electrical World
Electric Railway Journal
Electric Traction
Engineering & Mining Journal
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Iron Age
International Trade
Lumber Trade Journal
Lumber World Review
Manufacturing Jeweler
Marine Engineering
Metal Worker, Plumber & Steam Fitter
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Modern Hospital
Motor Age
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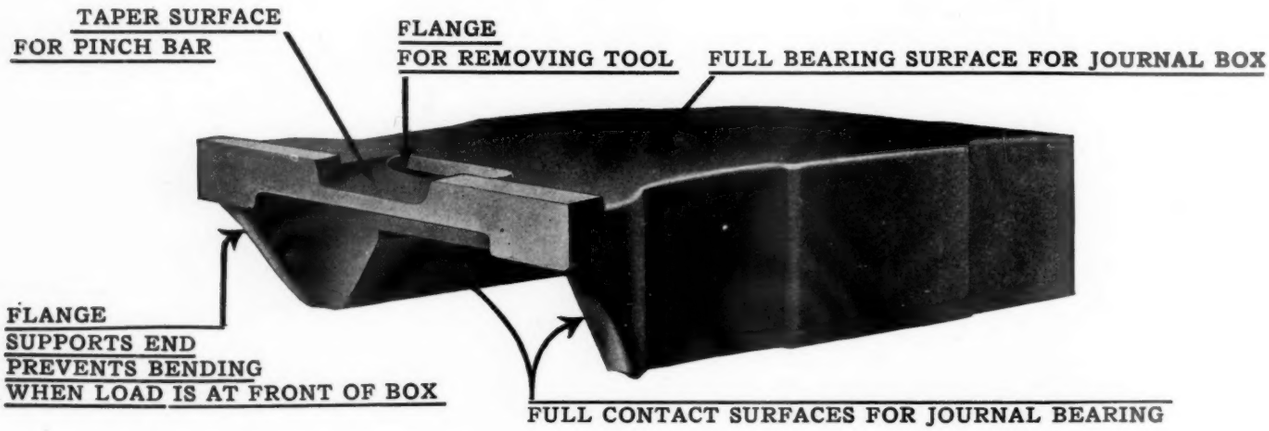
Most Easily Removable Wedge on the Market



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JOURNAL BEARING WEDGE

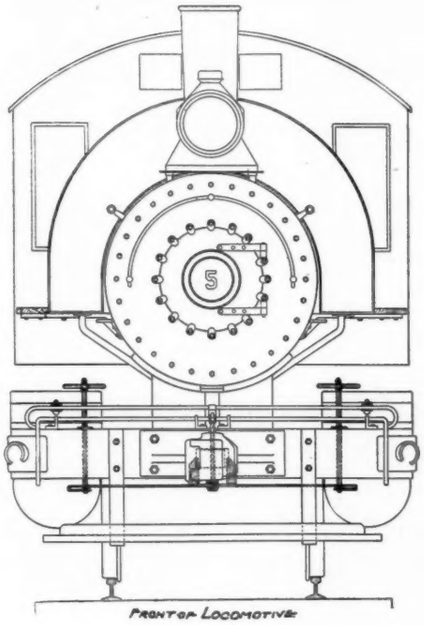
MADE OF HIGHEST GRADE MALLEABLE IRON

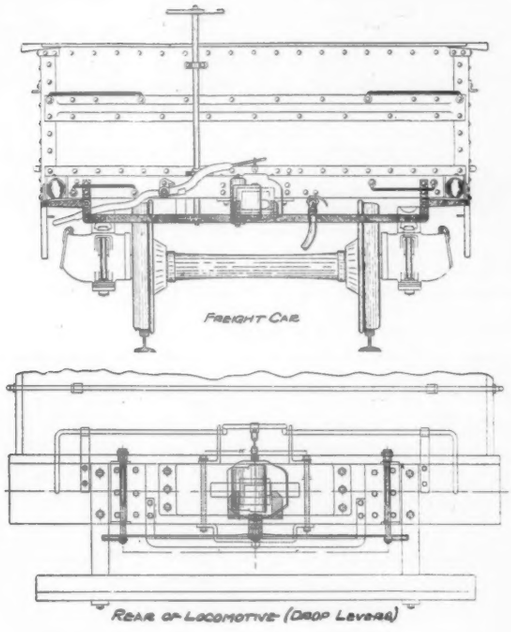
PERFECT DISTRIBUTION OF METAL GIVES LIGHTNESS AND STRENGTH

WESTERN RAILWAY EQUIPMENT CO.

SAINT LOUIS, MO.

Safety Always For Train Service Employes
Coupler Centering And Adjusting Device





Tested and found satisfactory by 2 years' actual hard service.

Adjusts coupler to meet opposing coupler without requiring train to stop, or compelling trainmen to go between cars to handle or kick the coupler. Prevents many accidents to train service employes.

Adjusts coupler from side of car, platform of car, platforms of new type switching engine, or from top of car if required.

Saves men, time, wear and tear, angle cocks, couplers and shop repairs, compensation and damage claims.

Design is simplicity itself, easily applied, easily removed, easily repaired.

Does not interfere with any type of cutting gear, air or steam hose connections, or drop bottom levers or mechanism. Can be applied to adjust any type of coupler on any type of car, or locomotive.

For full particulars as to price, design, etc., address

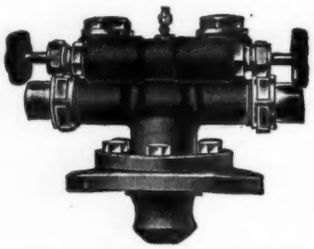
Oliver Iron & Steel Company

Pittsburgh **Pa.**

Also Manufacturers of

Machine Bolts		Carriage Bolts	Forgings for Railway and General Use
Track Bolts	Picks	Crow Bars	Concrete Reinforcing Bars
Screw Spikes		Drop Forgings	Telegraph and Telephone Pole Line Material

Double Boiler Check Valve



The position of this valve is on top of the boiler. It is provided with a stop valve for each check valve, so that either one of the check valves, if out of order, may be "cut out" without interfering with the feeding of the boiler. Removable caps on top of each check permit inspection and grinding of valves without disconnecting pipes.

Simple and pleasing design, compact and efficient. Furnished complete with boiler flange.

Injectors, Lubricators and Locomotive Appliances

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FLUSHING, L.I. NEW YORK

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SOLE AGENCY OF THE COALE MUFFLER SAFETY VALVES 3

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There is no mystery about the chemistry of waters. Each mineral Salt found in water has an effect peculiarly its own. Each of these salts alone would always behave exactly the same way under the same conditions. But they are rarely if ever found alone.

The complication in the whole subject is in determining how the combinations of impurities in certain various percentages, will behave under varying conditions of temperature and pressure.

This is where our extended experience and scientific methods excel. It is where the cure-all and mechanical systems fail.

Dearborn Treatment is composed of scientifically combined reagents for these mineral salts and counteracts all injurious effects.

DEARBORN METHODS ORIGINATED IN AMERICA and Dearborn treatment is used in all parts of the world.

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McCormick Building Chicago

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BRAKE SHOES

The Flanged Coach Brake Shoe

¶ Gives Superior Brake Effort.

¶ Gives Improved Wheel Service.

¶ Reduces Cost of Brake Maintenance.

MADE ONLY BY

AMERICAN BRAKE SHOE & FOUNDRY CO.
30 Church St., New York
322 So. Michigan Ave., Chicago Chattanooga, Tenn.
Gold Medal Award, Panama Pacific Exposition

2

AN AUTOMATIC STOP
—with additional features— but without complications.

Brings the signal into the cab, prevents running red boards, keeps the speed below the prescribed limit thus reducing track maintenance and motive power upkeep expense.

Write for details.

Julian-Beggs Signal Co., Terre Haute, Ind.

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These two volumes, the Locomotive Dictionary and Car Builders' Dictionary, are the only books available from which the latest developments in design and equipment can be obtained.

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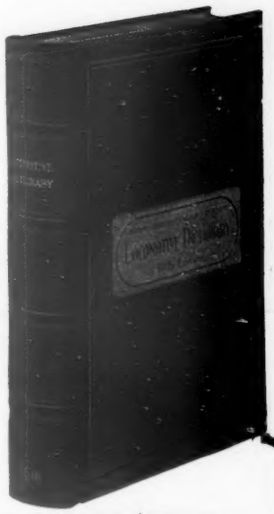

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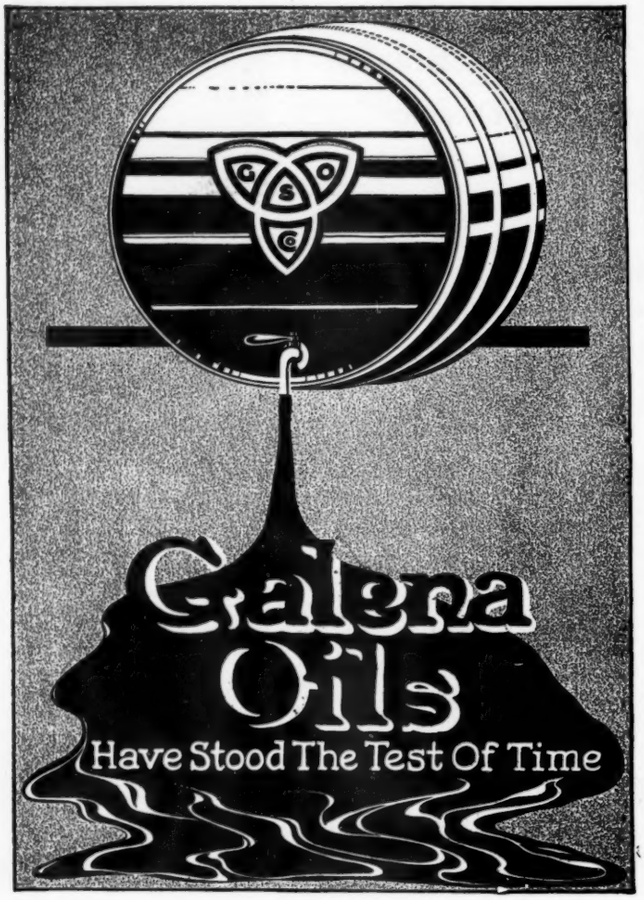

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It Is Mathematically Correct
Moderate in Price
Simple and Durable.
It is the Best One on the Market
Manufactured and Sold by

Crosby Steam Gage & Valve Co.
Boston New York Chicago London

SPRINGS

PITTSBURGH SPRING & STEEL CO.

D. C. Noble, President. H. A. Noble, Vice-Pres.
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Capital, $500,000

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1411 Fisher Bldg.

NEW YORK
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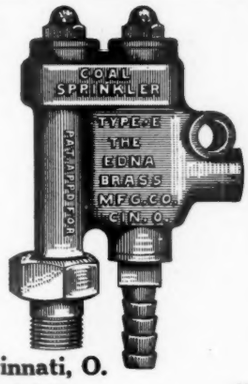

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Is automatic in action.
No other Sprinkler on the market has a wider range of action and is mechanically constructed for repairs without removal from pipes.
Will throw a stream of water 25 ft. with ⅜" hose nozzle.
Prices and details furnished on request.
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CHICAGO OFFICE: 551 McCormick Building 10

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EASILY TAKEN CARE OF BY

FALLS HOLLOW STAYS

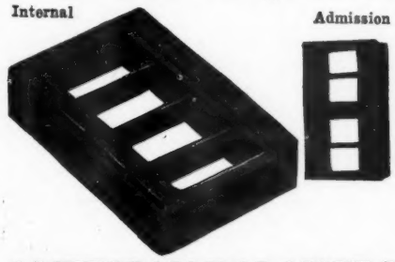
They eliminate drilling expenses and make unfailing tell-tales on fractured or broken stays. They possess double the endurance of Solid Stays, and are a proof without test against broken stays.

FALLS HOLLOW STAYBOLT CO., Cuyahoga Falls, Ohio, U. S. A.

1

Jack Wilson High Pressure Valve

Internal



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IT IS THE

ONLY SLIDE VALVE

that is working under 650 degrees, yes, for two years.

AMERICAN BALANCE VALVE CO.
JERSEY SHORE, PENNA.
VALVE SPECIALISTS SINCE 1890

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PITTSBURGH, PA.

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ATLAS STAY BOLT AND ENGINE BOLT IRON
THOR IRON FORGING BLOOMS,
— SCREW SPIKES — HEAVY FORGINGS — TRACK BOLTS —
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WANTED—Civil Engineer for small British Railway in Spanish West Indies; British subject preferred; must speak Spanish well; have good knowledge of maintenance, construction, also knowledge of concrete construction work. State age, experience, references. Salary to commence $150, unfurnished quarters. Two to three years' contract. Address Box 619, Railway Age Gazette, Woolworth Building, New York, N. Y.

WANTED—One Assistant Chief Train Dispatcher, salary $150.00. Two Train Dispatchers, salary $140.00 per month. For service in Central Ohio. Address Box 626, Railway Age Gazette, Woolworth Building, New York, N. Y.

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MAIN-LINE supervisor with 25 years' service on highest class road, graduate in civil engineering and an authority on track subjects, seeks permanent employment with road wishing to raise its standard of maintenance by up-to-date methods. Forty-eight years old, married, total abstainer. Ability, loyalty and honesty will be certified to. Address Box 628, Railway Age Gazette, 608 South Dearborn St., Chicago, Ill.

YOUNG man, 33 years, Sales Engineer. Several years experience Southern and Southeastern lines desires position with railway supply manufacturer. References. Address Box 633 Railway Age Gazette, Woolworth Bldg., New York, N. Y.

POSITIONS WANTED

WANTED—Position as Assistant Engineer or Division Engineer by University Graduate, 33 years of age. At present Assistant Engineer Surveys, large railway system. Previous experiences as follows: 4 years Division Engineer Maintenance of Way and structures; 3 years Assistant Engineer in charge of 30 miles new construction and track elevation; 1 year Assistant Engineer on Dock Construction; 2 years Chief of field survey parties; 1½ years charge of field and office work Federal Valuation. Best of references furnished; location immaterial. Minimum salary $2,000 per year. Address Box 624, Railway Age Gazette, Woolworth Building, New York, N. Y.

POSITION WANTED as southern representative for railway supply house. Was born and raised in the South and can handle this class of business in this territory. My record is A-1. Can furnish best of references including company by whom I am now employed. Address Box 627, Railway Age Gazette, Woolworth Building, New York, N. Y.

MAN, 46, with 20 years' railway experience, engaged past two years as Superintendent and General Superintendent, short line roads; open for engagement July 1. Have made a study of short line operation, and can get results. Character and reference first class. Address Box 615, Railway Age Gazette, 608 So. Dearborn St., Chicago, Ill.

EXPERIENCED railroad superintendent now in charge of Division seeks location. Legitimate reasons for change and refer to present management. Age 36. Capable of securing results and willing to accept any position to prove ability. Address Box 623, Railway Age Gazette, Woolworth Bldg., New York.

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WANTED—Position as Superintendent or Train-Master in Central or South America or Cuba, by an American, thirty years of age, reads and writes Spanish the same as English, twelve years' experience as switch man, conductor, yard master and for the past three years in general charge of a small line 70 miles long. Fully acquainted with train order, block and via systems. A-1 organizer and handler of men. Sober and reliable. Best of references. Address Box 575, Railway Age Gazette, Woolworth Bldg., New York, N. Y.

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WANTED—Position in the industrial traffic field, preferably in or near New York City, by a married man, age 35. Familiar with rates, routing, claims, I. C. C. rulings, etc. University education and business experience. Address Box 629, Railway Age Gazette, Woolworth Building, New York, N. Y.

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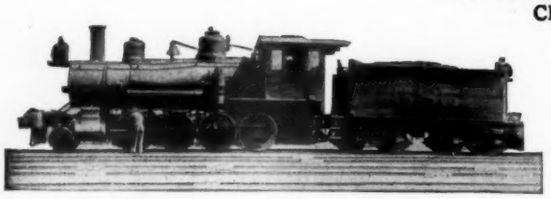

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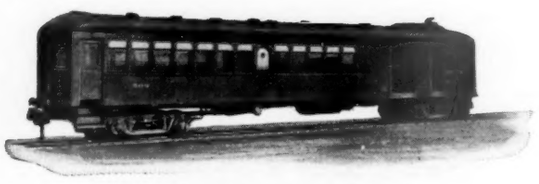

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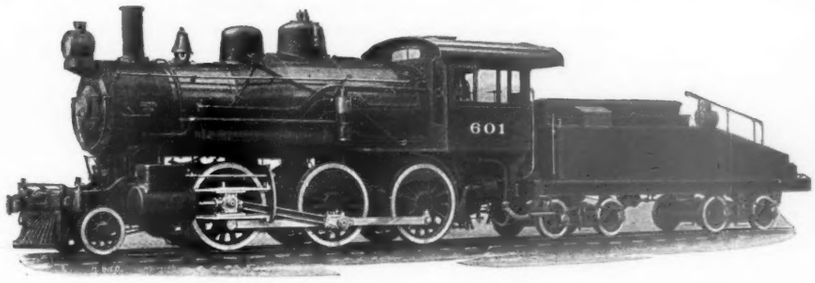

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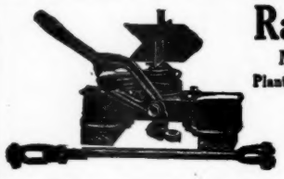

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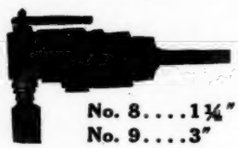

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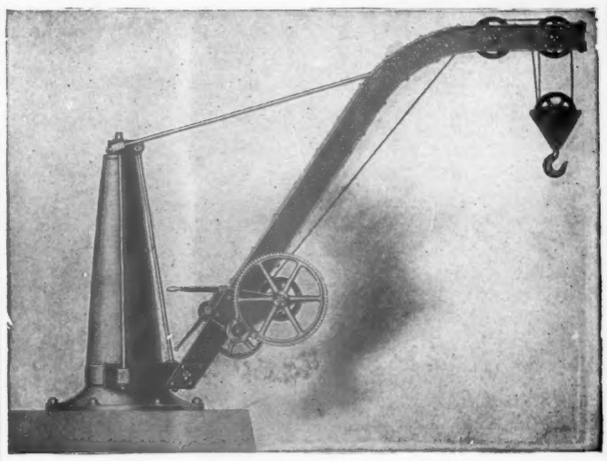

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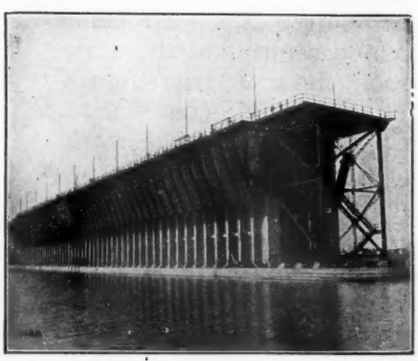

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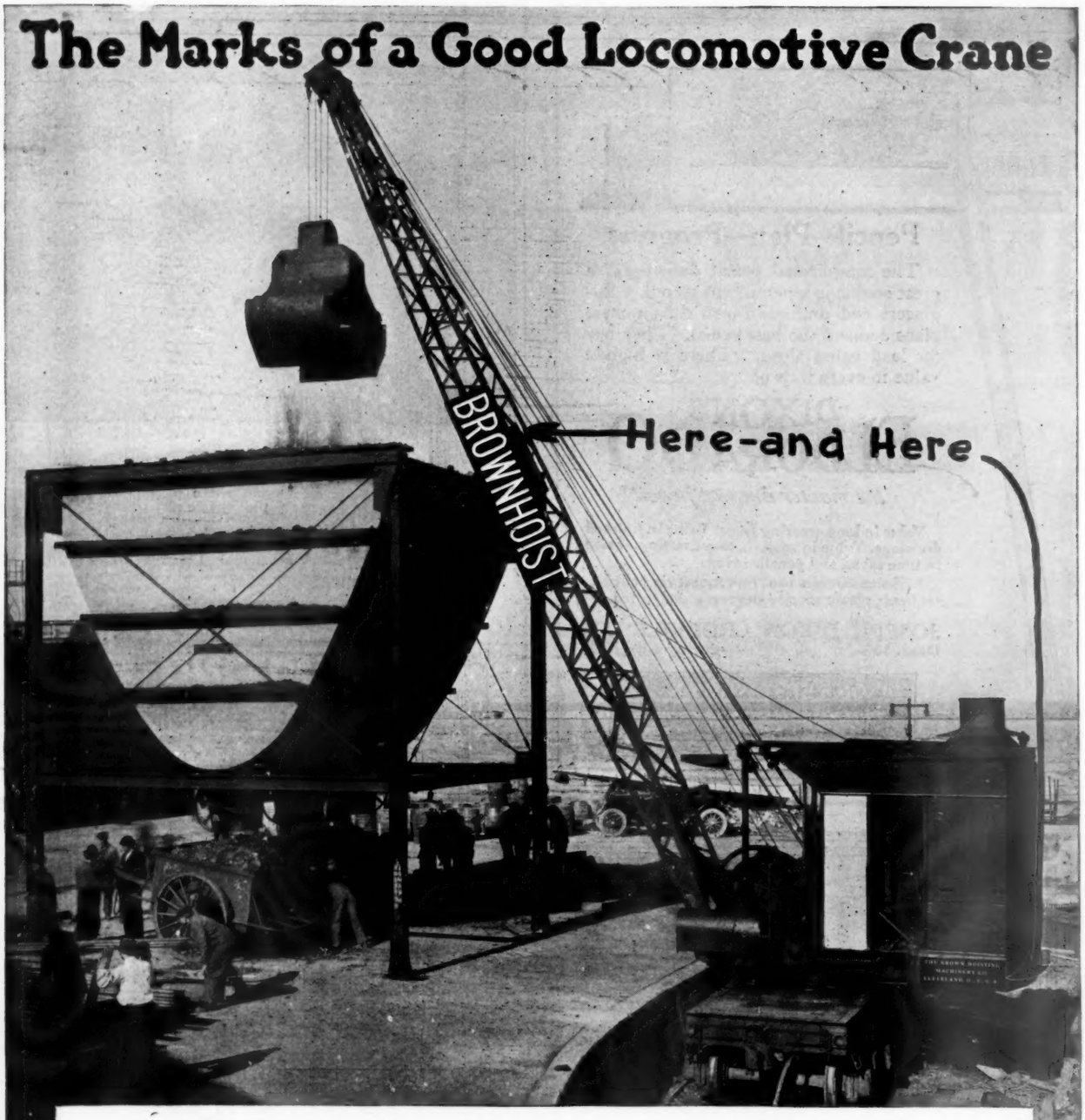

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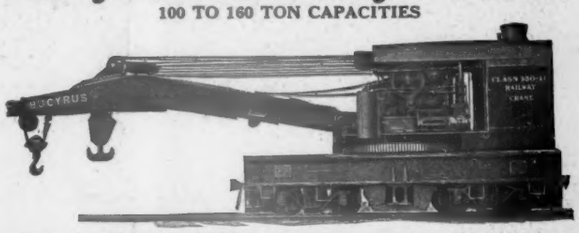

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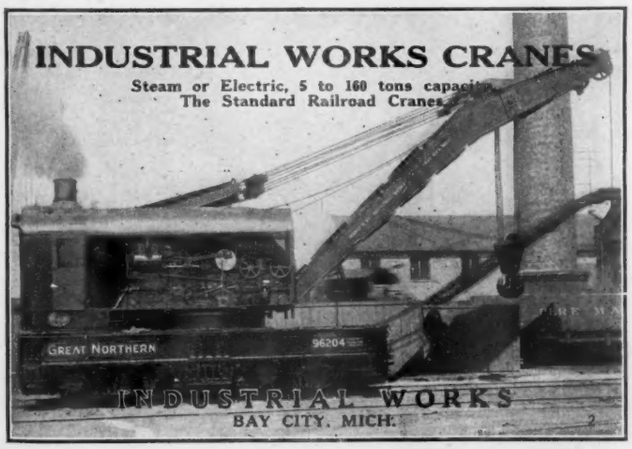

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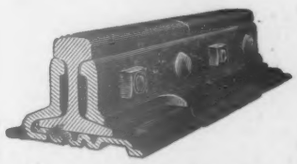

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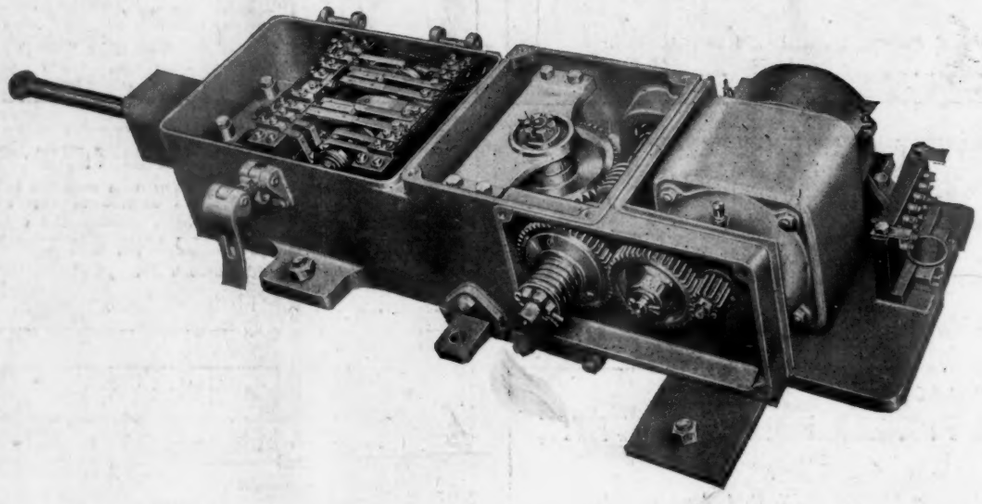

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